



**CENTER ON AMERICAN  
AND GLOBAL SECURITY**

---

INDIANA UNIVERSITY

Bloomington

**THE FUTURE OF  
NUCLEAR WEAPONS**

*Report of a Policy Seminar*

November 2009

The Center on American and Global Security at Indiana University is a non-partisan center dedicated to research, teaching, and service on homeland, national, and global security challenges facing the United States, other countries, and the global community.

© Trustees of Indiana University, 2009.



# CENTER ON AMERICAN AND GLOBAL SECURITY

INDIANA UNIVERSITY

Bloomington

## THE FUTURE OF NUCLEAR WEAPONS

### 1. INTRODUCTION

1. Policy concerns about nuclear weapons have been much in the news in 2009. The United States and other countries have grown increasingly worried about the intentions of Iran to pursue nuclear weapons. Negotiations with North Korea about its nuclear weapons and its capabilities to weaponize nuclear material continue with no clear “end game” in sight. The possibility of nuclear-armed Pakistan imploding from the impact of Islamic extremism on a weak, dysfunctional government remains a serious preoccupation in Washington, D.C. and other capitals around the world. Fears about the potential for nuclear terrorism continue to focus the attention of policy makers on keeping nuclear weapons and nuclear material out of the hands of terrorists.

2. In addition, President Barack Obama has proposed an ambitious agenda in the area of nuclear weapons. This agenda ultimately seeks the reduction and eventual elimination of existing nuclear arsenals. Proposed steps towards this objective include halting the proliferation of nuclear weapons; preventing terrorists from acquiring nuclear weapons or materials; concluding with Russia a successor arms control agreement to the expiring Strategic Arms Reduction Treaty (START); ratifying the Comprehensive Test Ban Treaty; and completing a verifiable Fissile Material Cutoff Treaty. Towards these ends, President Obama chaired a session of the United Nations (UN) Security Council in September 2009 that adopted a resolution on stopping the spread of nuclear weapons and strengthening compliance with non-proliferation treaties.

3. Given the importance of these policy issues concerning nuclear weapons for U.S. and global security, the Center on American and Global Security and the India Studies Program at Indiana University convened a policy seminar on October 29, 2009, to seek analysis and perspectives on the future of nuclear weapons from a distinguished group of experts. The experts invited to participate in the policy seminar were (in alphabetical order):

- Robert Jervis, the Adlai E. Stevenson Professor of International Politics at Columbia University;
- John Meirsheimer, the R. Wendell Harrison Distinguished Service Professor of Political Science and the Co-Director of the Program on International Security Policy at the University of Chicago;



CENTER ON AMERICAN  
AND GLOBAL SECURITY

INDIANA UNIVERSITY  
Bloomington

- Gideon Rose, Managing Editor of *Foreign Affairs* and a member of the National Security Council staff during the Clinton administration; and
- Stephen Schwartz, Editor of the *Nonproliferation Review*, former Publisher and Executive Director of the *Bulletin of the Atomic Scientists*, and Editor and co-author of *Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons Since 1940*.

4. These experts were joined in the seminar by faculty members, graduate students, and undergraduate students at Indiana University.

5. This Report attempts to capture key substantive issues presented and debated in the policy seminar without expressly identifying particular ideas or opinions with the specific invited experts or any person participating in the seminar. The seminar particularly sought the views of the invited experts and other participants on the plausibility and propriety of moving U.S. and global policy in the direction of the elimination of nuclear weapons. As described more below, the invited experts were not in agreement as to the wisdom of seeking to abolish nuclear weapons from international politics. Where possible, this Report has identified areas in which the views of the invited experts revealed a consensus on policy steps that could and should be taken with respect to certain nuclear weapons challenges.

## 2. THE VISION OF A WORLD WITHOUT NUCLEAR WEAPONS

6. For many reasons, the seminar’s invited experts agreed that the time was ripe for serious political discussions in the United States and worldwide about nuclear weapons policy. Compared to the intense, life-or-death nature of nuclear policies during the Cold War, the post-Cold War period had, in the eyes of the invited experts, experienced a lack of serious policy debate and discussion about the role of nuclear weapons at the highest levels of U.S. national security and foreign policy. Many current nuclear weapons controversies, such as Iran’s potential interest in nuclear weapons, provide reasons for re-thinking assumptions about nuclear weapons and engaging in a more concentrated focus on nuclear weapons policy. However, perhaps the leading reason why a comprehensive re-think is in order connects to the rejuvenated advocacy for the complete elimination of nuclear weapons from the world.

### 2.1 Legitimizing the idea of a nuclear-free world

7. The vision of a “nuclear-free world” is not new, having been articulated, for example, by President Ronald Reagan during his attempts to reach arms control agreements with the Soviet Union in the latter half of the 1980s. More recently, the abolition of nuclear weapons received high-profile support from the so-called “Four Horsemen of the Non-Apocalypse”—George Schultz, Henry Kissinger, William Perry, and Sam Nunn. Candidate and now President Obama has embraced the goal of a nuclear-free world as one the United States should strive, over time, to achieve. The invited experts agreed that these efforts have legitimized serious discussion of the elimination of

nuclear weapons, a topic that in past times would have been politically impossible to debate.

8. The invited experts also agreed that the idea of a nuclear-free world helps make policy deliberations about nuclear weapons more accessible to non-experts. Past debates have often privileged claims that only those with expertise and with access to classified information could shape nuclear strategy and policy. The seminar discussions questioned whether all the sophisticated theories and secret information generated during the Cold War actually produced better strategy and policies for the United States or the Soviet Union. The approach during the Cold War for the United States was, if nothing else, very expensive, totaling an estimated \$6 trillion between 1940 and 1996.

### *2.2 Skepticism about the vision of a nuclear-free world*

9. However, significant skepticism was voiced in the seminar about the sincerity of the vision of a nuclear-free world promulgated by the Four Horsemen and President Obama. Some skepticism flowed from doubts whether those advocating for this objective really believed it was feasible or prudent but who nonetheless jumped on the bandwagon because it was good politics for the United States to support this goal, however difficult it may be to achieve.

10. The seminar also considered arguments that the emphasis placed on a nuclear-free world is misplaced because, at present and for the foreseeable future, nuclear weapons neither define nor are central to the relations of the current mix of great powers. For example, neither Chinese nor Russian relations with the United States revolve around nuclear problems, and any conclusion of a successor treaty to START may not vastly improve U.S.-Russian relations because the real problems lie outside the nuclear realm. In this sense, focusing on the goal of a nuclear-free world might create policy worries that are disproportionate to the actual problems currently connected to nuclear weapons.

11. Questions were also raised in the seminar about the Obama administration's embrace of the elimination of nuclear weapons. Doubts were expressed that the Obama administration had clear steps in mind to achieve this goal that did not also conveniently serve other, less controversial objectives that benefit the U.S. national interest, such as preventing further nuclear proliferation. Comments were also made that, even on something as pressing as the negotiations with North Korea, the Obama administration had neither formulated any clear policy nor appointed key officials responsible for this important nuclear proliferation issue.

## **3. PROBLEMS WITH THE OBJECTIVE OF A NUCLEAR-FREE WORLD**

12. Much of the seminar focused on substantive reasons why the objective of a nuclear-free world faces many problems and obstacles. In this context, three key arguments against the feasibility and desirability of a nuclear-free world stand out from the presentations and discussion:

- The strong national interests strong and weak states have in possessing nuclear weapons;
- The stabilizing benefits nuclear weapons can bring to regional and international order; and
- The destabilizing impact of the ever-present possibility of the reintroduction of nuclear weapons in a nuclear-free world.

### *3.1 Strong national interests in possessing nuclear weapons*

13. The argument was frequently made in the seminar that the objective of eliminating nuclear weapons from international politics underestimates the strength of interests great and regional powers (including those states aspiring for such status) have in possessing nuclear weapons. Such powers want nuclear weapons for defensive or deterrence purposes because nuclear weapons are the ultimate “self-help” deterrent weapon. Despite discussion of possible scenarios of U.S. first strikes against the perceived vulnerability of the Chinese nuclear deterrent, there was consensus in the seminar that nuclear weapons have little, if any, utility for states as an offensive military capability. However, the deterrence rationale is strong for weak states located in regions fraught with dangers (e.g., South Asia) or that are confronted by rival states that have superior conventional military power (e.g., Pakistan, Iran, and North Korea).

14. Strong states also have deeply rooted incentives to maintain a nuclear weapons capability. All five permanent members of the UN Security Council are nuclear weapons states, and, as demonstrated during the Cold War, nuclear deterrence acts as a restraint on the machinations of the great powers among themselves. It was also argued deterrence has helped stabilize every rival power dyad between nuclear weapons states (e.g., U.S.-Soviet Union; U.S.-China; India-Pakistan; India-China; and North Korea-U.S.), an empirical outcome that supports the deep incentives actual and aspiring great and regional powers have in possessing nuclear weapons as a deterrent capability.

15. Israel also represents a different example of a strong state that finds nuclear weapons useful for deterrence purposes. Israel has superior conventional military forces vis-à-vis any rival state, or combination of such states, in the Middle East. Despite having conventional deterrence, Israel prefers to retain a nuclear capability as an added level of deterrence to ensure its survival against potential existential threats. An Israel without a nuclear deterrent, it was argued, might in fact be more nervous about its survival and more likely to use its conventional military superiority to address perceived threats from other countries, making armed conflict in the Middle East more not less likely.

16. The invited experts were in consensus that the development by North Korea of nuclear weapons and the alleged interest of Iran in such weapons illustrates the incentive some countries have in nuclear deterrence when confronted by rival states with superior conventional military power and aggressive foreign policies. As two of the members of the “Axis of Evil,” both North Korea and Iran felt threatened by the combination of “regime change” policies and American military might and have moved in the direction of developing a nuclear deterrent capability. The invited experts appeared in agreement

that the “Axis of Evil” policies pursued by the Bush administration (rather than U.S. policy on nuclear weapons) led directly to increased North Korean and Iranian pursuit of nuclear weapons capabilities. Although not in the interests of the United States, these proliferation moves have strategic imperatives that arguments about the possibility of a nuclear-free world do not address adequately.

17. Thus, weaker states threatened by a rival that has superior conventional authority will find nuclear weapons a potentially attractive deterrence option. Similarly, a nuclear capability helps a strong state deter a rival great power that has stronger conventional forces and lessens its need to match—soldier-for-soldier, tank-for-tank—the conventional military capabilities of its rival. For example, starting in the 1950s, the United States relied on nuclear deterrence in the face of presumptively superior numbers of Soviet armed forces, tanks, and other conventional weaponry. China’s modest nuclear arsenal allows it to be less anxious about the conventional military advantages the United States currently has.

18. The strategic imperatives that incentivize nuclear deterrence, likewise, do not mean that nuclear proliferation runs wild in international politics. Since the dawn of the nuclear age, only nine states out of nearly 200 in the international system are presently recognized as nuclear weapons states. Since the end of the Cold War, only one country has joined the nuclear club (North Korea), while another five either relinquished control over nuclear weapons they had in their territories after the breakup of the Soviet Union (Ukraine, Belarus, and Kazakhstan) or abandoned their nuclear ambitions (South Africa and Libya). Other countries capable of developing nuclear weapons have not proceeded down that path for a variety of reasons, including the use of extended deterrence by nuclear powers to bring important allies (e.g., NATO countries, Japan) under a strategic “nuclear umbrella.” Other states capable of going nuclear simply face no existential threats that would justify the expense and risks involved with developing a nuclear deterrent. In short, being a non-nuclear weapons state is the norm not the exception in the international system.

19. Flashpoints for potential interstate conflict in the contemporary international system tend to appear in contexts not stabilized by either conventional or nuclear deterrence. One example discussed in the seminar was the potential for conflict between Russia and Ukraine—along the lines of the Russian-Georgian war in 2008 only on a larger scale with potentially more adverse regional and international consequences. Ukraine has neither conventional deterrence (because it is not a member of NATO) nor nuclear deterrence vis-à-vis its more powerful neighbor. These are the contexts in which the weaker state might look favorably on obtaining a nuclear deterrence capability because it faces a potential existential threat.

### *3.2 Stabilizing effects of nuclear weapons*

20. The seminar also addressed the argument that nuclear deterrence helps stabilize relations between rival states regionally and globally. As noted above, the claim is often made that nuclear weapons helped rival dyads become less volatile and war-like during

and after the Cold War. This stabilization effect does not mean that all forms of conflict and violence between rivals disappear, as evidenced by Pakistan's use of terrorist proxies against India or the fears that Iran's possession of nuclear weapons would embolden its support of Hamas and Hezbollah against Israel. However, the strategy for the elimination of nuclear weapons has to contain or develop effective methods for keeping such rivalries constrained from large-scale violence using only the traditional tools of diplomacy and conventional military power.

21. Concerns about the potential destabilizing consequences of the elimination of nuclear weapons were sufficiently strong in the seminar that some (but not all) of the invited experts believed that a nuclear-free world is not, normatively, a good idea. This perspective challenges the "feel good" vibe that generally accompanies rhetoric about the vision of a nuclear-free world. It also reveals that the agenda for making the nuclear-free world a better place has to go well beyond getting rid of all nuclear weapons.

22. This agenda must also, somehow, address imbalances in conventional military power that will continue to exist. The invited experts agreed that elimination of nuclear arsenals would also require simultaneous conventional arms control to reduce the potentially destabilizing effect conventional imbalances would create. Thus, the agenda for eliminating nuclear weapons is far more ambitious, complicated, and delicate as an arms control and disarmament task than many people in favor of the concept understand.

23. The strategy for stabilizing a nuclear-free world also implies that policy makers must find means of peaceful dispute settlement that prove more successful than the experiments in this realm that have failed in the past (e.g., collective security, compulsory dispute settlement by an international court). Such mechanisms must be able to produce results sufficiently robust to convince states to stay away from nuclear weapons and to stay within the limits agreed on conventional military forces. The record of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is not stellar in this regard in light of the refusal of Israel, India, and Pakistan to join the NPT, the violations of the NPT perpetrated by North Korea and Iran, and the lack of commitment to disarmament shown by existing nuclear powers. In other words, the NPT has not proved effective in the "hard cases" involving nuclear proliferation that have arisen.

24. Given the connection between conventional and nuclear weapons and a state's power and survival, the temptation of states to cheat or defect from the nuclear and conventional regimes needed to sustain the nuclear-free world will be tremendous, systemic, and constant. What kind of peaceful dispute settlement mechanism can withstand these pressures over time is not clear, nor is the need for such a mechanism readily acknowledged in much of the advocacy for a nuclear-free world.

### *3.3 Destabilizing potential of the knowledge of how to make nuclear weapons*

25. The seminar also addressed a third major concern raised about a nuclear-free world—the destabilizing potential that might exist because knowledge and capabilities concerning how to make basic kinds of nuclear weapons (e.g., atomic bombs) cannot be

eliminated with abolition of nuclear arsenals. The continued existence of such knowledge will create a background level of anxiety among states, especially those confronting threats from rival states.

26. How can one state be sure that its rival, a former nuclear power, is not secretly developing nuclear capabilities? Just in case, should it too continue to be in a position to “go nuclear” if it perceives such a move necessary for its security? Can any verification regime produce sufficient assurance that the knowledge and capabilities to make nuclear weapons are not being put to surreptitious use? Is the protection offered by the Comprehensive Test Ban Treaty (CTBT) sufficient to guard against states defecting from the prohibition against developing and possessing a small number of nuclear weapons? As one participant put it, with respect to this problem of nuclear knowledge and know-how, the logic of the standard prisoner’s dilemma looks strong, creating a policy problem that could unravel efforts to create and sustain a nuclear-free world.

### *3.4 The specter of nuclear terrorism?*

27. As President Obama’s policy statements suggest, a key challenge for moving towards a nuclear-free world is addressing the perceived threat of nuclear terrorism. Not only must state nuclear arsenals be abolished but nuclear weapons or materials must also not fall into the hands of terrorist groups. The seminar presentations and discussion did not accord, however, much significance to the threat of nuclear terrorism. Consensus existed that (1) terrorist groups do not have, and are unlikely to develop, the technical capabilities to develop nuclear weapons; (2) no state actor, even so-called “rogue states,” has any interest in helping terrorist groups obtain or develop nuclear weapons; and (3) the “loose nukes” problem of the early post-Cold War era within the territory of the former Soviet Union has been addressed with sufficient rigor, through programs like the Nunn-Lugar initiative, so that the probability of terrorists stealing a poorly protected nuclear weapon has essentially been eliminated.

28. In light of these perspectives, the biggest terrorist threats in this realm appear to be (1) the use by terrorists of radiological weapons, so-called “dirty bombs” that detonate conventional explosives to disseminate radioactive materials; and (2) terrorist access to fissile material or, much less likely, usable nuclear weapons through opportunities created by implosion of a failed state (e.g., the concern about nuclear-armed Pakistan disintegrating). Advocating for a nuclear-free world does little to address the likelihood of terrorist use of dirty bombs because radioactive material for such devices can be obtained from peaceful uses of such substances (e.g., medical diagnostics). Nor does pushing for a nuclear-free world address the underlying causes of state failure or the interests of the government of a failing nuclear state to use its nuclear status as a means to wring more assistance from other states and the international community.

#### 4. OPPORTUNITIES CREATED BY EFFORTS TO ELIMINATE NUCLEAR WEAPONS

##### *4.1 Unease about the nuclear status quo and consensus on policy steps to reduce the nuclear threat*

29. Although most of the invited experts considered the vision of a nuclear-free world both impracticable and potentially dangerous, the seminar presentations and discussions explored the case for the elimination of nuclear weapons from international relations. Practical and normative arguments against the pursuit of a nuclear-free world often came with qualifications that the existing situation can be improved by reducing nuclear arsenals and prohibiting nuclear testing and that further nuclear proliferation (despite the supposed stabilizing effect of nuclear weapons in rival dyads) would not be a positive development for world politics.

30. In fact, consensus among the invited experts on current policy questions revealed significant concern about the existing nuclear status quo and agreement on measures supported by advocates of a nuclear-free world, including:

- The need for significant unilateral reductions in the size of the U.S. nuclear arsenal;
- The need for the United States and other nuclear powers to take their nuclear weapons off alert status in order to reduce the chances of accidents;
- The importance of ensuring that the NPT regime does not unravel and remains viable after the 2010 Review Conference;
- The need for the United States and other nuclear countries to ratify and comply with the CTBT;
- The advisability of rolling back North Korea's development of nuclear weapons and preventing Iran from becoming a nuclear weapons state;
- The need to recognize that political and military threats made by states possessing superior conventional military power create incentives for threatened states to obtain nuclear deterrence capabilities;
- The need to explore the potential benefits of the Chinese approach to nuclear weapons, namely its traditional reliance on a small, non-deployed, and relatively vulnerable nuclear deterrent capability; and
- The inadvisability of U.S. development of low-yield "counterforce" nuclear weapons as part of a 21<sup>st</sup> century modernization of its nuclear arsenal.

31. In short, the invited experts appeared to agree that it was in the interests of the United States and the international system to move towards a world where nuclear deterrence still existed but functioned with minimal levels of nuclear weapons that are not deployed or on constant alert and that was supported by a comprehensive ban on nuclear testing and extensive efforts to prevent further nuclear proliferation. This agreement on policy steps revealed significant unease with the dangers nuclear weapons present and raised questions about the practical and normative opposition to a nuclear-free world expressed in the seminar's presentations and discussion. As one participant

opined, all the arguments against a nuclear-free world can easily be flipped into the arguments why such a world is necessary to pursue.

32. An example arose with respect to responses to Iran’s move towards obtaining the capacity to develop nuclear weapons. Although Iran’s interest in developing such a capacity is perceived by many to be rational and predominantly a response to threats of U.S. aggression, the seminar found no one arguing that Iranian proliferation should be allowed to follow the logic adopted by other nuclear powers. This tension was illustrated in one participant’s argument that Iranian proliferation would not cause the cascade of awful things predicted by many, but, at the same time, the participant—despite the logic and the anticipated lack of dreaded consequences—still did not want “to run that experiment.”

33. In other words, this unease in detractors of the vision of a world free from nuclear weapons resonates with the thrust of those that want to advance this vision, namely that reliance on nuclear weapons to provide national and global security remains sufficiently dangerous that new strategies and approaches should be crafted. Put another way, the “threat that leaves something to chance” still leaves too much to chance for states and policy makers to rely on security frameworks predicated on nuclear deterrence. As one participant put it, nuclear deterrence is akin to an insurance policy that *increases* the risk of destruction for the very thing insured, which is an odd insurance policy for societies to buy at enormous political and economic costs.

#### *4.2 Developments supporting the goal of eliminating nuclear weapons*

34. Those supporting President Obama’s pursuit of a world free of nuclear weapons acknowledge that reaching this goal will be very difficult for all the reasons described earlier in this Report. However, supporters of this objective point to developments that suggest the effort to move in this direction is not doomed at the outset. One example given was the relatively unpublicized unilateral reductions by the United States of its arsenal of nuclear weapons. Without fanfare, since the mid-1960s, the United States has reduced its stockpile of nuclear weapons by nearly 84% (from 32,000 to about 5,200) because the eliminated weapons no longer have military or political utility and have become too expensive to maintain for no benefit. In addition, the Soviet/Russian nuclear arsenal has also experienced a dramatic decline, from an estimated 45,000 weapons in the mid-1980s to approximately 4,800 today, a decrease of 89%.

35. Change is also happening within the NATO alliance. The United States has, since the end of the Cold War, withdrawn U.S. nuclear weapons from NATO countries either unilaterally or at the request of the host NATO government because they no longer serve any political or military purpose. Most recently, Germany asked the United States to remove all its nuclear weapons from German territory. The denuclearization of NATO signifies a willingness to re-think the role of nuclear weapons in how the alliance provides security for its members. The push for a nuclear-free world is likewise about starting and sustaining a comprehensive re-evaluation of the lessons learned about nuclear weapons during the Cold War.

36. The efforts of the Four Horsemen and President Obama have, as indicated above, given the vision of a nuclear-free world more legitimacy and credibility than at any other time in recent history. It was argued in the seminar that this change, and the processes it will stimulate, will themselves have some restraining effect on countries interested in developing nuclear capabilities. This effect will be more productive than the cascade of nuclear problems caused by the policies of the Bush administration on pre-emptive use of U.S. conventional military power and pre-emptive threats on use of nuclear weapons—policies that produced the proliferation activities of North Korea and Iran and worried the Chinese sufficiently to motivate moves towards modernizing their nuclear capabilities.

#### *4.3 Strategic guidance for U.S. nuclear policy*

37. In addition, if the objective is a nuclear-free world, this target can give strategic guidance to U.S. nuclear policy at this turning point in national and international attitudes towards nuclear weapons. In the post-Cold War period, U.S. policy on nuclear weapons has drifted complacently or shifted recklessly, leaving the United States without a clear sense of purpose and direction for its nuclear capabilities. The goal of working towards a nuclear-free world is shaping how the Obama administration approaches the negotiations with Russia on the treaty to replace START, the talks with North Korea and Iran, the congressionally mandated nuclear posture review, the global nuclear summit planned for April 2010, the NPT Review Conference scheduled for May 2010, the anticipated 2010 ratification debate on the CTBT in the U.S. Senate, the threat of nuclear terrorism, and the question of whether and how to rebuild and transform the “ageing and decrepit” U.S. nuclear weapons production complex at a roughly estimated cost of \$155 billion.

38. The road from the status quo to a nuclear-free world will be, proponents acknowledge, long and arduous, and not all the twists and turns have been identified. However, making progress towards this goal will move policy in the direction of the ideas that produced consensus among the invited experts, especially moving towards significant reduction in large nuclear arsenals, striving for minimal deterrence capabilities, implementing a comprehensive test ban, and refusing to continue to follow Cold War logic on nuclear weapons (e.g., by not building new counterforce weapons for the U.S. nuclear arsenal).

#### *4.4 The problem of nuclear knowledge and know-how*

39. Proponents of the nuclear-free world concept acknowledge that states will continue to possess the knowledge and know-how to develop basic kinds of nuclear weapons, but they question whether this reality poses such a significant danger to achieving the goal of a nuclear-free world. As noted earlier, despite global access to the relevant know-how, the vast majority of states have decided not to develop nuclear weapons before and after the NPT entered into force. As one participant pointed out, this track record suggests the NPT has worked better than many expected at the time it was negotiated. Another participant pointed out that, excluding the problems associated with North Korea and Iran, the dangers of further proliferation in the international system were

very small, suggesting a deep lack of interest on the part of many states to utilize the nuclear knowledge and know-how already within their reach.

40. In addition, as countries move away from reliance on nuclear deterrence, their capabilities in the nuclear weapons area will become less relevant and important. The ability to move rapidly from theoretical knowledge to actual weapon design, development, testing, and production will atrophy. The existence of a comprehensive ban on testing of nuclear weapons and other legal and political constraints (e.g., the NPT, work of the International Atomic Energy Agency, UN Security Council Resolutions 1540 and 1887, the Nuclear Suppliers Group, and the Australia Group) will further crimp the confidence a state might need in trying to move back in the direction of relying on nuclear weapons for its security. Thus, the inability to “put the nuclear genie back in the bottle” does not necessarily lead to the cheating and defection predicted by the prisoner’s dilemma in game theory.

#### *4.5 The problem of nuclear terrorism*

41. As noted above, the seminar witnessed consensus among the invited experts that the threat of nuclear terrorism is not as great as many believe. From the perspective of proponents of a nuclear-free world, the possibility of terrorist use of “dirty bombs” is not a reason to fail to pursue a nuclear-free world. Tighter limits on access to radiological materials, which have been on-going for years, should continue and be strengthened. Moving towards a nuclear-free world would support the legitimacy and effectiveness of such restrictions.

#### *4.6 Taking steps on a long journey*

42. How the Obama administration and other supporters of a nuclear-free world move this project forward is not entirely clear, as proponents admit. The agenda is, indeed, massive, and includes, as discussed in the seminar, achieving significant cuts in the arsenals of at least the United States and Russia, convincing North Korea to give up its nuclear weapons, preventing Iran from going nuclear, shoring up the NPT, getting the CTBT to enter into force, ensuring that nuclear-armed Pakistan does not implode, guaranteeing Israeli security, securing nuclear weapons and materials from falling into terrorists’ hands, and achieving conventional arms control agreements supportive of the objective of a nuclear-free world.

43. As one seminar participant pointed out, the vast majority of policy energy historically has been devoted to justifying the need for nuclear weapons in U.S. national security and foreign policy and refining nuclear strategy to strengthen deterrence. The exploration of how to move away from reliance on nuclear weapons to a radically different security reality is just beginning, and the apparent implausibility of the objective may reflect little more than an inability and unwillingness to escape patterns of thought and assumptions about nuclear weapons in world politics created and hardened during the Cold War. Although proponents of a nuclear-free world do not yet know precisely how to

achieve or maintain such a world, the efforts made toward this objective can help create and sustain the conditions that might make it possible.

## 5. CONCLUSION

44. The seminar revealed that the pessimists about the prospects for a nuclear-free world are guarded optimists concerning the role nuclear weapons play in U.S. and global security. The optimists about the objective of a world without nuclear weapons are pessimists with respect to the value nuclear weapons have for national and international security. However, the significant differences between the skeptics and the proponents revealed throughout the seminar should not obscure the consensus among the invited experts about policy choices the United States should make concerning the future of nuclear weapons and nuclear deterrence (see ¶ 30 above).

45. This level of consensus on policy issues points to solid intellectual and political backing for radical changes in U.S. security and foreign policies on nuclear weapons, the role of conventional military power in nuclear deterrence's dynamics, and the U.S. predilection to infuse serious political disagreements with weaker rival states with threats of military action. As in counterinsurgency, where the insurgents have a say in the outcome, the United States alone cannot determine whether the idea of a nuclear-free world proves a cynical charade, a chimera, or stimulates changes that significantly lower the risk of nuclear conflict, accidents, and the tit-for-tat machinations between nuclear rivals over the credibility of their respective nuclear deterrents.

46. The future of nuclear weapons is in flux, and the effort to move the world towards elimination of nuclear weapons has, if nothing else, defined the choices countries face rather starkly and raised the stakes of the decisions leaders and societies will be forced to make today, tomorrow, and in decades to come.

## **About the Center on American and Global Security at Indiana University**

Indiana University established the Center on American and Global Security (CAGS) in March 2007 to harness the University's resources and capabilities to strengthen research, teaching, and service on the most pressing security issues facing the United States and the global community.

To contact CAGS, please get in touch with any of the following persons:

David P. Fidler, Director

Sumit Ganguly, Director of Research

Blake K. Puckett, Director of Strategic Projects

Center on American and Global Security

211 S. Indiana Avenue

Bloomington, IN 47405

Tel: 812-855-6403

Fax: 812-855-0555

E-mail: [cags@indiana.edu](mailto:cags@indiana.edu)

Web: <http://www.indiana.edu/~cags/>