



**At the crossroads:
catastrophe or cooperation?**



NUCLEAR THREAT INITIATIVE ANNUAL REPORT 2008



World Institute for Nuclear Security

14:00 Launch Event:
Monday, 29 September 2008
Ground Floor, ACV





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Letter from the Co-Chairmen

United States President Barack Obama traveled to Prague in early April 2009 and said: “I state clearly and with conviction America’s commitment to seek the peace and security of a world without nuclear weapons.”*

He also re-started disarmament talks with the Russian Federation, launched a four-year effort to secure all nuclear materials worldwide, pledged to pursue ratification of the Comprehensive Test Ban Treaty, and called for “a new framework for civil nuclear cooperation.”

U.S. Senator John McCain spoke from the Senate floor in early June. He cited Ronald Reagan’s dream “to see the day when nuclear weapons will be banished from the face of the Earth,” and then added: “I share that dream.” Senator McCain said: “The time has come to take further measures to reduce dramatically the number of nuclear weapons in the world’s arsenals.”

President Obama and Russian President Medvedev met in London and said in a joint statement: “We committed our two countries to achieving a nuclear free world...We agreed to pursue new and verifiable reductions in our strategic offensive arsenals...”

This same sentiment has been echoed in the official position of the United Kingdom, in the official statement of the Group of Eight Nations meeting in July 2009, and in editorial pages throughout the globe. What appears possible today in reducing the nuclear threat could only have been dreamed about in January 2001, when NTI began its work.

* The text of this co-chairs letter reflects developments through early July 2009. The text of the annual report covers NTI’s work through the end of 2008.

What has led high-ranking officials in the United States and other nations to endorse this bold change?

First, nuclear materials and nuclear know-how have been spreading to more countries, and global terrorist groups have emerged that will launch a nuclear attack if they have a weapon. Second, prominent national security experts have begun to believe that the spread of nuclear weapons and the worldwide distribution of the materials to make them are becoming an increasing danger.

This change in expert and leadership opinion began to crystallize with an opinion piece in *The Wall Street Journal* in January 2007 that, according to *The New York Times*, “sent waves through the foreign policy establishment.”

The op-ed was written by George Shultz, William Perry, Henry Kissinger, and NTI Co-Chairman Sam Nunn.

The op-ed links a vision of a world free of nuclear weapons with urgent steps designed to reduce nuclear dangers and calls for a “solid consensus for reversing reliance on nuclear weapons globally as a vital contribution to preventing their proliferation into potentially dangerous hands, and ultimately ending them as a threat to the world.”

NTI has launched the Nuclear Security Project (NSP) to build support for these ideas. NTI serves as the coordinator of the Project, responsible for managing project activities and coordinating the work of the authors, in conjunction with the Hoover Institution.

The goal is to get governments to rethink their policies and embrace the vision of a world free of nuclear weapons – and to take the concrete steps that would simultaneously reduce the risk of a nuclear weapon being used and move us toward a nuclear weapons-free world.

The rise in political momentum since the January 2007 op-ed (and a subsequent op-ed in 2008) has been extraordinary. The *National Journal* wrote that the op-ed had “changed the nonpro-

liferation debate in a pen stroke.” President Obama said the four authors “helped inspire” the nuclear weapons policy he announced in his Prague speech. Senator McCain cited the four authors in his remarks from the Senate floor on a world without nuclear weapons.

More than two-thirds of the living former U.S. secretaries of state, secretaries of defense and national security advisors – spanning the Kennedy, Johnson, Nixon, Ford, Carter, Reagan, Bush, Clinton and Bush Administrations – have endorsed the ideas in the *Wall Street Journal* piece.

Now the vision and the steps are spreading around the world.

British Prime Minister Gordon Brown said: “We will be at the forefront of the international campaign... to ultimately achieve a world that is free from nuclear weapons.” In a speech sponsored by the Carnegie Endowment for International Peace, former British Foreign Minister Margaret Beckett lauded the four authors and said that the need for “such a vision and action is all too apparent.”

Indian Prime Minister Manmohan Singh and other high-level Indian officials have supported the goal of global nuclear disarmament and proposed a series of steps for getting there.

In the United Kingdom, Italy, Germany, Poland, Australia and Norway, senior statesmen have joined together across party lines to publish their own statements about the importance of working toward a world free of nuclear weapons.

Through the NSP, we have been working to continue to build political momentum for urgent actions needed to reduce the nuclear threat. Our NSP work includes several analytic studies that address some of the most difficult questions about how to chart the path to a world free of nuclear weapons. In addition, we have formed partnerships with policy institutes in Russia, Australia, Germany, India, Sweden and the United Kingdom that are eager to help us build political support and a policy framework for the steps ahead.

THE NUCLEAR SECURITY PROJECT BUILDS ON NTI'S CORE WORK OF THREAT REDUCTION

The Nuclear Security Project builds on the work that NTI has been doing since 2001. NTI has a solid record of working to reduce the threats from nuclear, biological and chemical weapons. Key projects include:

World Institute for Nuclear Security (WINS): NTI helped create and launch a new, first-of-its-kind organization to strengthen the physical protection and security of nuclear and radioactive materials and facilities worldwide – the World Institute for Nuclear Security (WINS). In September of 2008, NTI joined with the U.S. Department of Energy, the government of Norway, the International Atomic Energy Agency (IAEA), and the Institute of Nuclear Materials Management to establish WINS, which is based in Vienna, Austria. WINS brings together nuclear security experts, the nuclear industry, governments and international organizations to focus on rapid and sustainable improvement of security at nuclear facilities around the world.

Nuclear Fuel Reserve: According to the IAEA, 40 countries have expressed interest in building their first nuclear power plant. Many of them are considering producing their own nuclear fuel so that they don't have to rely on foreign fuel suppliers. But enriching uranium can develop fuel for a nuclear reactor or material for a nuclear weapon. To address that threat, NTI has proposed establishing an international nuclear fuel bank to be owned and operated by the IAEA. The fuel bank would provide a "last resort" fuel reserve – to protect against political disruptions in international supply – for any nations that meet established criteria. To bankroll the initial stockpile of enriched uranium, NTI pledged \$50 million, backed by NTI advisor Warren Buffett. The NTI/Buffett \$50 million contribution is contingent on 1) the IAEA receiving an additional \$100 million in

funding, or an equivalent value of low enriched uranium, to jump-start the reserve; and 2) the IAEA taking the necessary actions to approve establishment of the reserve. With additional commitments totaling \$107 million from the United States (\$50 million), Norway (\$5 million), the United Arab Emirates (\$10 million), the European Union (\$32 million) and Kuwait (\$10 million), the financial condition has been fulfilled, and we look forward to working with the IAEA in 2009 to help fulfill the second condition.

Fighting Bioterrorism: NTI's Global Health and Security Initiative (GHSI) works to prevent and contain infectious disease outbreaks by improving disease surveillance around the world. Fortunately, many of the most effective steps for fighting biological attacks are also the very measures needed to fight infectious diseases. Whether a disease is naturally occurring or intentionally caused, the essential elements of effective disease control are to detect, diagnose and take timely measures to contain the spread.

NTI helped create the Middle East Consortium for Infectious Disease Surveillance (MECIDS), supports the Mekong Basin Disease Surveillance network (MBDS) and plans to create two more are underway. MECIDS, which includes Israel, Jordan, and the Palestinian Authority, has already successfully detected and helped contain outbreaks of salmonella, mumps, and avian flu. This collaboration has not only brought political cooperation to this complicated region; it has also been a trigger for technological innovation.

The MBDS network in Southeast Asia – which includes Cambodia, Laos, Myanmar, Thailand, Vietnam, and China – proved its value in May 2008 when it responded quickly after Cyclone Nargis hit Myanmar. With the region at high-risk for the spread of diseases like cholera and malaria, an NTI-funded, rapid response team was able to deliver critical, coordinated aid.

NTI is also currently working to support the creation of the Southern Africa Centre for Infectious Disease Surveillance, whose

initial members include Democratic Republic of Congo, Mozambique, South Africa, Tanzania, and Zambia.

During the next year, NTI will embark on a project to connect these and other regional networks. This effort – called “Connecting Health Organizations for Regional Disease Surveillance” (CHORDS) – will allow professionals to collaborate and share direct interactive problem solving, best practices, knowledge management, and technology as widely as possible – with the ultimate goal of detecting, diagnosing and responding to disease globally.

NTI’s Global Health and Security Initiative also helped establish the International Council for the Life Sciences (ICLS), a non-profit organization that aims to enhance global biological security and safety by promoting international standards and sharing best practices.

NTI’s disease surveillance networks and the ICLS work to minimize biological risks, in particular major and destabilizing infectious disease outbreaks, whatever their cause. Joining NTI’s efforts in 2009 as Special Advisor for Global Health and Security is Dr. David Heymann, former Assistant Secretary General at the World Health Organization and current Executive Chairman for the United Kingdom’s Health Protection Agency.

WORKING FOR A SAFER WORLD

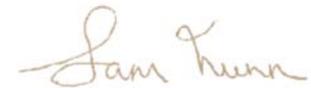
From its inception, NTI has been working for a safer world by bringing together people of diverse views and political backgrounds from around the world to work together to reduce nuclear, chemical and biological dangers. We are now at a point in time where new opportunities are presented to make truly transformative progress to reduce these dangers.

Three of NTI’s outstanding staff since our founding in 2001 have recently joined the Obama Administration to help advance this work. While we are sorry to lose such talented experts as Brooke Anderson, Dr. Margaret (Peggy) Hamburg and Laura Holgate, we believe that our nation will benefit greatly from their service and are pleased that they will continue to work to strengthen U.S. national security and public health.

We are grateful for your interest in NTI. Please log on to www.nti.org to find out more about how you can join us in working for a safer world.

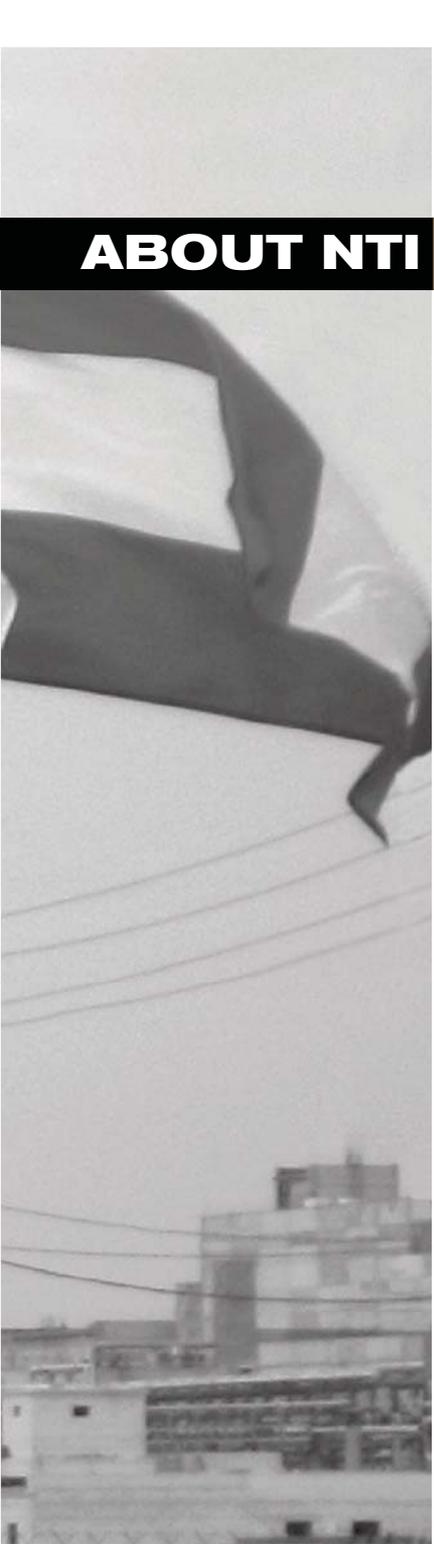


Ted Turner
Co-Chairman



Sam Nunn
Co-Chairman





ABOUT NTI

In the year 2000, startled by news reports of rising threats from weapons of mass destruction, Ted Turner asked former Senator Sam Nunn if he would join him in launching a private foundation to help reduce these dangers to present and future generations.

Nuclear weapons are the domain of government, and details are usually top secret. Even Presidents have a hard time challenging or changing nuclear doctrine. Could a private organization make a difference?

After six months of study, Turner, Nunn, former U.S. Deputy Secretary of Energy and now NTI President Charles B. Curtis and leading experts concluded that a private organization could indeed make a difference in reducing weapons threats – but the organization would have to be staffed by top experts respected for their knowledge; it would have to have a strong communications team to make the world aware of the threats; it would have to have the financial resources not only to tell the world what must be done, but to show the world through direct action projects that could serve as models for wider action; and it would have to be governed by an international board of directors with expertise in these issues and experience in government, who would have the stature necessary to gain the attention of top leaders and the public.

With the commitment to build a private organization with these strengths and the mission of reducing the risks from weapons of mass destruction, NTI was established in 2001.

“**Nobel Peace Prize winner Mohammed ElBaradei, Director General of the International Atomic Energy Agency, praised NTI for ‘a series of concrete achievements, successful steps towards making the world safer and more secure.’”**

Here are a few of the things NTI has helped do:

- ▶▶ Assisted with the removal of nuclear bomb-making material from vulnerable nuclear reactor sites;
- ▶▶ Triggered greater U.S. and global funding for securing loose nuclear bomb-making material;
- ▶▶ Commissioned a widely-read annual progress report on securing nuclear materials;
- ▶▶ Launched cooperative regional programs for disease surveillance globally;
- ▶▶ Sped efforts to investigate disease outbreaks with the World Health Organization;
- ▶▶ Put threat reduction on the front-burner of the G8 nations;
- ▶▶ Established an organization to develop and spread the world’s best nuclear security practices;
- ▶▶ Accelerated efforts to destroy chemical weapons;
- ▶▶ Helped inject the issue of WMD threats into the 2004 and 2008 U.S. Presidential campaigns of both political parties.

NTI is a non-profit, nonpartisan, non-ideological organization where people with different views from all parts of the world work together to develop and implement a carefully thought out, well-organized global response to dangers that affect all of humanity.

Co-chaired by Ted Turner and Sam Nunn, NTI is a global initiative headquartered in Washington, DC. It is governed by an expert and influential Board of Directors with members from the United States, Japan, India, Pakistan, China, Jordan, Sweden, France, Russia and the United Kingdom. Board members include a former U.S. Secretary of Defense, members of the legislative bodies of the United States, France and the United Kingdom, a member of the Jordanian royal family, a Nobel prize-winning economist, a world-renowned nuclear physicist, the former commander of U.S. strategic nuclear forces and

other international security experts. The foundation's activities are directed by Co-Chairman Sam Nunn and President Charles Curtis.

Advisors to the Board of Directors include leading figures in science, business and international security. NTI is staffed by experts in nonproliferation, international affairs, communications, and public health who have operational and international experience in their fields.

Recognizing that governments have most of the resources and authority in the large-scale work of threat reduction, NTI focuses on leverage – knowing that it's not just what NTI can do that matters, but what NTI can persuade others to do. So NTI spends money and effort where it can help trigger government action, policy changes and funding increases. This includes NTI's direct action projects, the successes of which have spurred leadership by governments. NTI also helps educate the public about the threats in ways that inspire people to take action.

Private individuals are making an impact in areas previously thought to be the exclusive province of government. Investor Warren Buffett has said: "NTI has shown that private resources can be leveraged to get governments around the world to do more, and I'm pleased to support its efforts."

Nobel Peace Prize winner Mohammed ElBaradei, Director General of the International Atomic Energy Agency, praised NTI for "a series of concrete achievements, successful steps towards making the world safer and more secure."

In the past, when citizens and activists learned about the threats from weapons of mass destruction, they were concerned – but they didn't believe they could have an impact, so they tuned out and moved on. Today, those who are worried about weapons threats have a place to go and a partner to support, if they want to work for a safer world for our children.



Mohammed ElBaradei, Director General of the International Atomic Energy Agency, NTI Co-Chairman Sam Nunn and Secretary of Energy Samuel Bodman at the launch of the World Institute for Nuclear Security, Vienna, Austria, September 2008.



NUCLEAR

The Nature of the Threat

“More than 17 years after the dissolution of the Soviet Union, we continue to live with a level of risk of an accidental, mistaken, or unauthorized nuclear exchange between the United States and Russia that is not much lower – and may actually be higher – than existed during the Cold War.”

A single nuclear attack anywhere would be catastrophic for the world. The loss of life, the rise in fear and the loss of confidence could result in unpredictable consequences, including a severe and prolonged global depression. And that's one attack. The first attack may make even the threat of a second or a third destabilizing beyond measure.

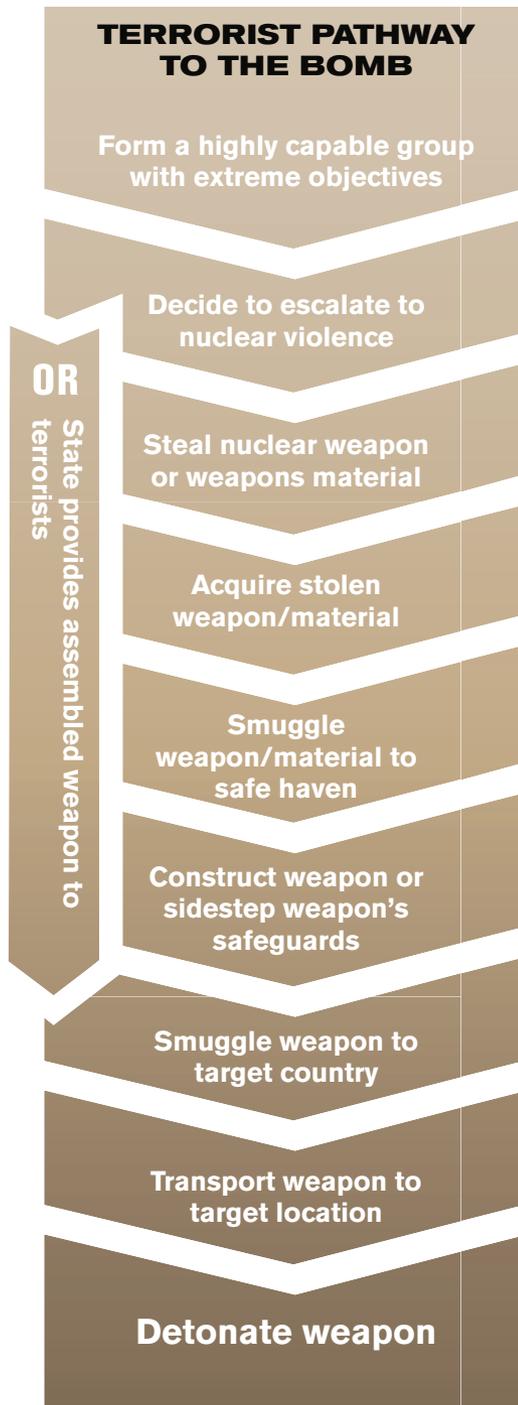
Ominously, the chances of a nuclear attack are increasing, not decreasing – and it could come from any one of three directions: 1) A terrorist nuclear attack launched against a major city, such as Moscow, London, New York, Washington or Dehli, designed to trigger maximum chaos; 2) A nuclear exchange between nuclear weapons states such as India and Pakistan; or 3) An accidental or unauthorized launch from any nuclear weapons state – made more likely as nations move toward the capability to launch weapons in a matter of minutes.

Each one of these scenarios is plausible, but there are steps we can take to reduce these dangers.

Terrorists are seeking nuclear weapons, and there can be little doubt that if they acquire a weapon, they will use it (or threaten to use it). Their chances of acquiring a weapon increase with every new facility that starts enriching uranium or separating plutonium, every new country that builds nuclear weapons and with every nuclear facility that has poorly secured weapons materials.

Highly enriched uranium and plutonium are the raw materials of nuclear terrorism. Right now, there are nuclear weapons materials spread across approximately 40 countries. At the current pace, it will be several decades before this material is adequately secured or eliminated.

Even under tight security, nuclear material is at risk. In November of 2007, four gunmen broke into the Pelindaba nuclear facility in South Africa, deactivated several layers of security and broke into the emergency control center, where they shot a guard. Fortunately, the guard was able to trigger an alarm, and the intruders fled. But what would have happened if the intruders had gained access to the highly enriched uranium? The facility has enough weapons-usable uranium to make 25 nuclear bombs.



The availability of highly enriched uranium is a serious threat to international security – and so, therefore, is the ability to produce enriched uranium. Today, the number of enrichment facilities worldwide is increasing. A number of countries are considering developing the capacity to enrich uranium to use as fuel for nuclear power, but the ability to enrich uranium also gives them the capacity to produce highly enriched uranium for a nuclear weapons program if they chose to do so.

At the same time, the number of nuclear weapons states is increasing – with North Korea developing a weapon and Iran moving closer. Others may soon follow. A world with 12 or 20 nuclear weapons states will be immeasurably more dangerous than today's world.

In addition, the United States and Russia continue to deploy thousands of nuclear weapons on ballistic missiles that can be launched immediately and hit their targets in less than 30 minutes. Russia's erosion of conventional military capability has led it to increase its dependency on nuclear weapons, including tactical "battlefield nuclear weapons." And now Russia has declared – as NATO did during the Cold War – that it may use nuclear weapons even if not first attacked with nuclear weapons.

While the overall risk of war is down, more than 17 years after the dissolution of the Soviet Union, we continue to live with a level of risk of an accidental, mistaken, or unauthorized nuclear exchange between the United States and Russia that is not much lower – and may actually be higher – than existed during the Cold War.

There are several causes: budget problems and an erosion in non-nuclear forces in Russia have led the Russian military to increase its reliance on nuclear weapons; a perceived tilt in the U.S. and Russian strategic forces in favor of the U.S. may make Russia more likely to launch upon warning of an attack, without waiting to see if the warning is accurate; and the Russian early warning system is degraded and more likely to give a false warning of incoming missiles.

The U.S. has a strong security interest in improving Russian early warning capabilities. The fact that the Russian military today may not be able to provide its leaders with accurate information relating to the possible launch of a ballistic missile should concern us all, as it raises the possibility of a Russian president making a fateful decision to launch what he mistakenly believes is a retaliatory nuclear strike based on a faulty warning of an attack. That America's survival could depend on the accuracy of Russia's early warning or command and control systems working perfectly 365 days a year is an absurd situation in today's security circumstances.

Mistakes can and do happen – including in the U.S. military where there is evidence that attention to nuclear weapons security has diminished. In August of 2007 on North Dakota's

HEU BLEND DOWN

Fifteen years ago, the United States and Russia concluded the historic “HEU purchase agreement.” Five hundred tons of highly enriched uranium from former Soviet nuclear weapons are being blended down to low-enriched uranium, and then used as fuel for nuclear power plants in the United States. Right now, roughly one in ten light bulbs in the United States is powered by nuclear reactor fuel that used to be in Soviet nuclear weapons.

Russia is likely to have hundreds of tons of highly enriched uranium not needed for plausible military purposes after the current 500-ton HEU purchase agreement is completed in 2013. Accelerating and expanding the downblending of this excess HEU would have important security benefits. Russia has indicated it has no interest in continuing the agreement on its current terms. It can earn more money creating low-enriched uranium from scratch than it can earn by making LEU from down-blended HEU. But that approach, of course, does not offer the security benefits of reducing the total amount of HEU in the world.

NTI has commissioned a number of papers by U.S. and Russian specialists to determine what set of circumstances

would enhance Russia’s incentives to expand the downblending, while still preserving the interests of other stakeholders. Phase One of this project considered broad conceptual questions. Phase Two offers cost and schedule options for expanding and accelerating Russian HEU blend down and proposes some novel approaches to making such options attractive.

Ultimately, the goal is for the U.S. and Russia to reduce HEU stockpiles to the minimum required to support low levels of nuclear weapons, plus a modest additional stock for naval fuel. Exploring the options for accelerating HEU blend-down is a signature piece of work by NTI. We identify broad goals, analyze the barriers, and show – either through direct action projects or through expert analysis – how the barriers can be removed and progress made.

The benefits to global security associated with reduced HEU stockpiles are impossible to quantify, but as long as terrorists and others seek the raw material for nuclear weapons, those who are responsible for those materials are morally bound to minimize the risk that it might be stolen or diverted. There is no better way to reduce the risk than to eliminate the material.

Minot Air Force Base, six U.S. nuclear weapons were taken out of the weapons bunker, loaded on a B-52, and flown across U.S. air space – inadvertently – without the knowledge or authorization of anyone in the Air Force. If it can happen in the United States, it can happen anywhere.

We have come to a nuclear tipping point. With no dramatic change of direction, the likelihood of a nuclear catastrophe will multiply in the next decade.

Strategies for Nuclear Threat Reduction

Reducing the risk of a nuclear attack by terrorists or nation-states requires a broad set of strategies that focus on reducing states' reliance on nuclear weapons, strengthening regional security, and denying organizations or states access to essential nuclear materials, technologies and know-how. No state acting alone has the power to protect itself, especially from nuclear terrorism.

Achieving any one of these threat reduction strategies will require an unprecedented degree of global cooperation. NTI is working to address a number of the most urgent near-term risks and take advantage of opportunities to leverage greater action from governments. Some of our projects are described below.

SECURING, CONSOLIDATING AND REDUCING FISSILE MATERIAL

Producing nuclear explosive material – plutonium and highly enriched uranium – is the most difficult hurdle in making a nuclear weapon. Therefore, control over these materials is the first line of defense against nuclear catastrophe. A global approach to consolidating, securing and eliminating weapons-usable nuclear materials is essential, because the chain of security is only as strong as its weakest link, and vulnerable nuclear material anywhere is a threat to everyone, everywhere.

Since its inception in 2001, NTI has been working to increase awareness of the threat of poorly secured nuclear material around the globe.

In 2002, NTI committed \$5 million to seal a deal between the United States, Yugoslavia and Russia to remove nearly 50 kilograms of poorly-secured HEU from the Vinca Institute of Nuclear Sciences outside Belgrade to the Research Institute for Atomic Reactors in Dmitrovgrad, Russia, where it was converted to a form of uranium that cannot be used in weapons. News of the operation ran on page one of *The Washington Post*. It helped bring fresh attention to the threat and prompted the U.S. Department of Energy to create a new \$450 million program – the Global Threat Reduction Initiative – to remove HEU from civilian facilities around the world.



An NTI effort supported the removal of poorly secured HEU from the Vinca Institute of Nuclear Sciences, Serbia.

(continued on page 17)

FUEL BANK

According to the International Atomic Energy Agency (IAEA), approximately 40 countries are interested in building their first nuclear power plant. If they go forward, all of these countries will need nuclear fuel, and they'll get it in one of two ways: by making it themselves or buying it from someone else.

Many of these countries are considering making it themselves. They may not be willing to rely on the small club of nuclear fuel exporters to power their homes and factories. But spreading the ability to make nuclear fuel also spreads the ability to produce nuclear bomb-making materials, which creates new security threats.

To help prevent the spread of uranium enrichment technology, NTI, with Warren Buffett's backing, pledged \$50 million to the IAEA to help create a low-enriched uranium stockpile for the benefit of nations that choose to rely on foreign suppliers. The initiative, announced in 2006, gained instant support in a *New York Times* editorial titled: "Mr. Buffett's Excellent Idea."

Any country that meets established criteria could have access to the fuel bank as a "last resort" supply of nuclear fuel. These

countries would still rely on the global open market of nuclear fuel, but if there were political disruptions in their fuel supply, they could fall back on the fuel bank guarantee.

NTI's \$50 million pledge is conditioned on other nations providing \$100 million in matching funds. The U.S. government contributed the first \$50 million. Four more recent pledges – from Norway (\$5 million), the United Arab Emirates (\$10 million), the European Union (\$32 million) and Kuwait (\$10 million) – have helped NTI reach this monetary condition. The next step is for the IAEA and its member states to determine and approve the terms of the fuel bank's operation.

The idea of a fuel bank has been discussed internationally for years. But no other fuel bank plan has ever attracted this much funding or gathered so much momentum. Should the IAEA implement its operational plan, the hope is that the NTI fuel bank will catalyze other fuel assurance concepts, so that countries feel no pressure to enrich or reprocess to feel secure in their nuclear fuel supply.



WORLD INSTITUTE FOR NUCLEAR SECURITY

In Vienna, in September 2008, NTI helped give birth to an organization based on an idea it had been actively working on since 2005: the World Institute for Nuclear Security, a first-of-its-kind organization designed to provide a forum to share best practices on physical protection of nuclear and radiological materials – with a focus on preventing theft of dangerous materials and keeping nuclear weapons out of terrorist hands.

NTI's \$3 million founding grant – funded entirely by a gift to NTI from the Peter G. Peterson Foundation – was matched by the U.S. Department of Energy. WINS is also supported by the governments of Norway and Canada, the International Atomic Energy Agency, and the Institute of Nuclear Materials Management.

Above: NTI Co-Chairman Sam Nunn, NTI President Charles Curtis, Ambassador Bengt Johansen, Permanent Representative of Norway to the IAEA, and Nancy Jo Nicholas, former President of the Institute of Nuclear Materials Management at the World Institute for Nuclear Security launch event.

Left: Peter G. Peterson

Terrorists have been seeking nuclear weapons for at least 10 years. They haven't succeeded so far because it's very hard for them to acquire nuclear bomb-making material. They don't have the facilities to make it, so they have to acquire it illicitly by theft, diversion or a black market purchase.

But until now, we have not had an organization that can help nuclear facilities operators learn security techniques from the world's top experts and each other. As *The Economist* wrote in October of 2008: "WINS is a place where for the first time those with the practical responsibility for looking after nuclear materials – governments, power plant operators, laboratories, universities – can meet to swap ideas and develop best practices."

Through WINS, the professionals responsible for on-the-ground security of nuclear materials will share their knowledge about security practices with their peers worldwide. These security professionals are in the best position to know

where the vulnerabilities are, how to improve security, and how to ensure that improvements are implemented quickly and effectively. WINS will place a high priority on protecting sensitive information that may be discussed between members. The hope is that every institution responsible for the security of nuclear and radioactive material will join and participate in WINS.

WINS's first executive director is Dr. Roger Howsley. Dr. Howsley was previously Director for Security, Safeguards and International Affairs at British Nuclear Fuels, where he was responsible for the entire BNFL Group of Companies, which included 16 countries and 17,000 employees.

In preventing a terrorist nuclear attack, blocking the theft of nuclear materials is our first line of defense. No nuclear material. No nuclear weapon. Our best chance to keep nuclear materials out of terrorist hands is to make sure that the best security practices are implemented in facilities everywhere. WINS will help make that happen.

Since then, GTRI has removed and repatriated more than 40 nuclear bombs worth of highly enriched uranium from the Czech Republic, Germany, Vietnam, and other countries, while securing more than 750 radiological sites around the world containing over 20 million curies, enough for thousands of dirty bombs.

In another initiative designed to help secure nuclear materials and keep them out of the hands of terrorists, NTI helped create and launch a new, first-of-its-kind organization to strengthen the physical protection and security of nuclear and radioactive materials and facilities worldwide – the World Institute for Nuclear Security (WINS). WINS was launched in Vienna, Austria in September 2008 with support from the U.S. Department of Energy, the government of Norway, the International Atomic Energy Agency (IAEA), and the Institute of Nuclear Materials Management. WINS brings together nuclear security experts, the nuclear industry, governments and

“Rising energy needs – combined with greater concern about global warming – has increased global interest in nuclear power.”

international organizations to focus on rapid and sustainable improvement of security at nuclear facilities around the world. (For more information, see page 16).

In addition, NTI and the government of Kazakhstan eliminated more than a dozen bombs worth of highly enriched uranium in Kazakhstan and is now working to convert a reactor that used highly enriched uranium to one that uses low enriched uranium. This project already led to a decision by the Kazakhstan President to eliminate all HEU from Kazakhstan.

BUILDING GLOBAL COOPERATION ON SECURITY GOALS

Rising energy needs – combined with greater concern about global warming – has increased global interest in nuclear power. That could increase the likelihood of a terrorist nuclear weapon, unless the world takes steps to ensure that increased use of nuclear power does not lead to an increased capacity to enrich uranium – which can be both the fuel for nuclear reactors as well as the explosive material of a nuclear weapon. To try to ensure that the spread of nuclear power plants does not lead to a spread of uranium enrichment facilities, NTI is leading an effort to create a nuclear fuel bank under the auspices of the International Atomic Energy Agency. This fuel bank – to be owned and managed by the IAEA on a non-political, non-discriminatory basis – would give confidence to countries that rely on foreign suppliers of nuclear fuel that they can have an assured supply of nuclear fuel even if their regular supply chain is disrupted for political reasons, as long as the recipient meets IAEA's access criteria. (For more information, please see page 15).

In addition, NTI is the coordinator for the Nuclear Security Project, an effort to galvanize global action to reduce urgent nuclear dangers and build support for reducing reliance on nuclear weapons, ultimately ending them as a threat to the world. Building on ideas set forward in two *Wall Street Journal* op-eds in 2007 and 2008 by George Shultz, William Perry, Henry Kissinger and Sam Nunn, the Nuclear Security Project links the vision of a world free of nuclear weapons with urgent steps that can be taken to reduce nuclear dangers. The project is raising public awareness, outlining the steps ahead, and building support and momentum for a world free of nuclear weapons. (For more information, please see page 23).

LEVERAGING RESOURCES TO ADDRESS NUCLEAR INFRASTRUCTURE AND HUMAN CAPITAL

As part of restructuring its nuclear complex since the end of the Cold War, Russia is reducing its nuclear weapons workforce and is closing or converting facilities at ten nuclear sites. Many

of the people who hold these jobs have access to nuclear weapons material or information that could prove useful to terrorists or states seeking nuclear capabilities.

Since 2001, NTI has supported projects in Russian closed nuclear cities to help prevent the spread of weapon-making knowledge. The goal is to strengthen nuclear security by re-employing personnel with knowledge of sophisticated weapons design and materials handling practices.

In Soviet times, Sarov was a very prosperous closed nuclear industrial city. Since the collapse of the Soviet Union, Sarov has suffered a serious economic downturn, losing more than 4,000 jobs. To help the workers make the transition to peaceful, commercial work, NTI contributed \$1 million to a revolving loan fund, which in turn has funded 10 companies making a variety of products including ultralight aircraft, precision equipment for the oil and gas industries and medical equipment. More than 100 former weapons complex workers have found jobs in the civilian sectors, and the successful enterprises are repaying their loans, allowing the fund to make new loans.

In addition, NTI has also invested in SarovLabs, a contract research organization that can tap the extraordinary talent of the Russian scientists. Their clients have included Hyundai, DaimlerChrysler and Russian oil companies. NTI's most recent initiative in Sarov was a \$1 million grant to support Sarov's Open Technopark. The Technopark is located next to, but outside the fence of, the closed city so that it is open to visitors. NTI is partnering with the Russian company AFK Sistema to create an energy efficiency center in the Technopark that will research and build small, energy-efficient power sources.

NTI's experiences in Sarov can provide important lessons for future efforts to redirect nuclear weapons workers into peaceful, economically promising work. To fully achieve their nonproliferation goals, programs to redirect employment must reach beyond nuclear scientists and include technicians, guards, drivers and any other employees with access to information about nuclear material production and facility operations. Also, if new business enterprises are going to succeed, additional investment and training in marketing and promotion is needed. In this regard, NTI helped SarovLabs hire a Russian, western-trained marketing expert, which led to a significant increase in SarovLabs' client base and revenue. The most urgent lesson, however, is the need to prevent workers from selling access or information by moving them from the nuclear complex to outside civilian employment – rather than merely paying specialists a small maintenance salary to stay in place.



Sarov Technopark

PROJECTS APPROVED OR ONGOING IN 2008 **NUCLEAR**

SECURING, CONSOLIDATING AND REDUCING FISSILE MATERIAL

Accelerating Russian HEU Blend-down, Phase II

To build on a previous project to analyze options for accelerating the elimination through blend-down of excess Russian highly enriched uranium. This allows for additional analysis to optimize the options, promote the accelerated blend-down concept in the United States, Russia and Europe, as well as prepare additional data necessary for Russian government decision making.

*Facilities and Institutes of Russian Ministry of Atomic Energy and others
Moscow, Russia
Up to \$1,000,000
2005-2008*

Removing HEU from Serbia

To contribute to the removal of poorly secured HEU from the Vinca Institute of Nuclear Sciences by supporting the decommissioning of its research reactor and management of remaining spent nuclear fuel.

*International Atomic Energy Agency
Vienna, Austria
Up to \$5,000,000
2002-2008*

Supporting Conversion for Alatau Nuclear Research Reactor

To provide the equipment and incentives for the research reactor at the Institute of Nuclear Physics at Alatau to be converted to use low-enriched uranium fuel by providing a new reactor control and protection system that will improve reactor safety and a beryllium reflector to enhance reactor performance.

*Institute for Nuclear Physics
Alatau, Kazakhstan
Up to \$1,600,000
2005-2008*

Planning to Secure and Remove HEU from Soviet-Supplied Research Reactors to Improve Safety and Reduce Proliferation Risks

To evaluate security, safety, regulatory, transportation and cost issues associated with removing fresh and spent HEU fuel from 24 poorly secured research reactors in 17 countries and to develop a comprehensive plan to achieve it.

*International Atomic Energy Agency
Vienna, Austria
Up to \$260,000
2002-2008*

IAEA Project on Research Reactor Centers of Excellence and HEU Minimization

To develop research reactor coalitions and regional centers of excellence in order to help secure under-utilized research reactors and incentivize reactors to convert from highly enriched uranium (HEU) to low enriched uranium (LEU) fuel. In parallel, the IAEA will strengthen international support for user facilities and centers of excellence as the way to address the limited scientific missions that require HEU. In the process, the IAEA will emphasize safe and secure operations in a smaller number of facilities using HEU.

*International Atomic Energy Agency
Vienna, Austria
\$640,000
2008-2010*

Strategic Master Plan for Russian Research Reactors

To build on a previous successful project to define, at an aggregate level, the challenges associated with the continued use of highly enriched uranium (HEU) fuel at research reactors and related facilities in Russia. This project will create a strategic master plan on the basis of a facility-by-facility survey to consider security requirements, HEU removal, spent fuel management, and reactor conversion opportunities for civilian research reactors in Russia. The resulting recommendations will provide necessary input to a comprehensive approach to phasing out HEU use in Russian civilian research facilities.

*Foundation for Atomic Energy in the 21st Century
Moscow, Russia
Up to \$2,500,000
2006-2010*

LEVERAGING RESOURCES TO ADDRESS NUCLEAR INFRASTRUCTURE AND HUMAN CAPITAL

Development of Conversion Companies

To contribute \$1 million to the Fund for Development of Conversion Companies, an existing Russian revolving loan fund, established to create permanent, commercially viable civilian businesses in the closed nuclear city of Sarov and provide sustainable employment for former weapons personnel.

*Fund for Development of Conversion Companies
Sarov, Russia
Up to \$1,000,000
2002-2008*

Building Capacity at SarovLabs

To assist SarovLabs in becoming a self sustaining, commercial contract research organization that employs former weapons scientists by providing project management and marketing support.

*SarovLabs
Sarov, Russia
Up to \$450,000
2003-2008*

Strategic Planning for Snezhinsk

To engage local and institute leaders from the closed nuclear city of Snezhinsk in strategic planning to support two key missions of the city over the next five years: downsizing the nuclear weapons facility and staff and securing the remaining nuclear materials at the site.

*The Eisenhower Institute
Washington, DC, USA
Up to \$230,400
2003-2008*

Development of Open Technopark

To support project and infrastructure development in the new Open Technopark, located just outside the closed nuclear city of Sarov and in an area that provides free access to non-Russian companies and investors but still within an easy commute for former weapons scientists and engineers from Sarov. This project will contribute to the creation of new jobs not related to nuclear weapons and accelerate the transition to a smaller, more stable and more secure Russian nuclear weapons complex.

*Center for Technologies Transfer "Sistema-Sarov"
Sarov, Russia
Up to \$1,000,000
2005-2009*

BUILDING GLOBAL COOPERATION ON SECURITY GOALS

Launch of the World Institute for Nuclear Security (WINS)

To support the launch of the World Institute for Nuclear Security (WINS), a new independent, international institution to facilitate the collection and sharing of best practices in nuclear material security. Through this approach, WINS will improve the security of weapons-usable materials around the world and reducing the risk that such materials are available to terrorists.

World Institute for Nuclear Security

Vienna, Austria
\$3,000,000
2008-2010

U.S. Russia Nuclear Nonproliferation Workshop

To support a workshop on nuclear nonproliferation that brings together scientists, experts, and senior officials from the U.S. and Russia to find common ground in key areas of nuclear proliferation, countering nuclear terrorism, and moving toward a world free of nuclear weapons.

Russian Academy of Sciences

Moscow, Russia
Up to \$150,000
2008-2009

Strengthening the Global Partnership

To develop a constituency among and beyond the Group of Eight (G8) leading industrial nations for nuclear, biological and chemical threat reduction programs through partnerships with 21 security organizations from 16 nations. This project promotes the effective and timely implementation of the G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction's commitment to devote \$20 billion to support nonproliferation projects, initially in Russia, over the next decade.

Center for Strategic and International Studies
Washington, DC, USA
Up to \$1,793,152
2005-2008

Concept Development Grant for Low Enriched Uranium (LEU) Fuel Reserve to be Owned and Managed by the International Atomic Energy Agency

To promote the creation of a low enriched uranium (LEU) fuel reserve, owned and managed by the International Atomic Energy Agency (IAEA), to limit the spread of fuel cycle technology. Should NTI win the necessary support for this concept, up to \$50 million will be put toward the initial establishment of such a reserve, to include the first three years of storage costs, the IAEA's management and oversight costs,

and the purchase of the initial LEU deposit. An LEU fuel reserve that is buffered from politically motivated disruptions of nuclear fuel supply will add a unique tool to current national and international efforts to significantly reduce the need for new enrichment facilities.

NTI and others
Washington, D.C., USA
Up to \$108,000
Ongoing

Promoting Multilateral Approaches to the Nuclear Fuel Cycle in Russia

To promote the NTI fuel bank initiative and related subjects, including the Russian Angarsk international enrichment center project, by initiating a discussion among Russian governmental and nongovernmental experts and the media on the future of nuclear energy and the future role of international nuclear fuel cycle initiatives.

PIR Center for Policy Studies in Russia
Moscow, Russia
\$277,100
2007-2008

U.S. Russian Nonproliferation Working Group

To support the continued work of the NPWG by: analyzing trends that undermine strategic stability, with specific attention to ways in which these may exacerbate short decision-time postures and alert systems; actively re-shaping the nuclear

enterprise; and advancing analysis and debate about the additional near-term steps that the U.S. and Russia could take to significantly reduce nuclear dangers.

Belfer Center for Science and International Affairs,
John F. Kennedy School of Government, Harvard University,
Cambridge, MA, USA
\$250,000
2008

GENERATING NEW THINKING ON REDUCING NUCLEAR RISKS

Promoting Responsible Nuclear Stewardship in India

To promote responsible government policies and practices related to the safety and security of nuclear weapons and materials in India by developing educational materials for policymakers and facilitating meetings among nuclear experts in India and other nations.

Delhi Policy Group
New Delhi, India
\$230,000
2003-2008

Weapons of Mass Destruction Project

To support weapons of mass destruction related programs at the Institute of Peace and Conflict Studies, New Delhi. In particular, funding will contribute to projects in the following five areas: nuclear materials security, missile material cutoff treaty negotiations, WMD Web Module, India-U.S. Nuclear Deal, and supporting global standards for biosafety and security by helping to extend the International Council of the Life Sciences into India. Activities will focus on building capacity and an information base among elite audiences (policy makers, media and academia) through workshops, seminars and conferences and support of a web module.

Institute of Peace and Conflict Studies
New Delhi, India
\$184,000
2007-2009

Ballistic Missile Defense and Nuclear Stability in Asia

To assess the impact of ballistic missile defense on the strategic interactions and stability among India, Pakistan, China and Taiwan.

Center for International Security and Cooperation
Stanford University
Palo Alto, CA, USA
\$150,000
2005-2008

Nuclear Modeling Project

To support a computer modeling project that aims to analyze the impact of increasing warning and decision time on strategic stability. This project will build upon existing computer modeling techniques and advance the state of the art in strategic assessment of de-alerting effects on strategic stability and deterrence.

World Security Institute
Washington, DC, USA
\$235,000
2008-2009

U.S. - Russia Civil Nuclear Cooperation

To contribute to an analysis of the U.S. - Russia Agreement for Nuclear Cooperation, including the legal requirements of such an agreement and candidate areas for U.S.-Russian technical cooperation, for use by experts and officials in considering the approval of such an agreement.

Center for Strategic and International Studies
Washington, D.C. USA
\$20,000
2008

NUCLEAR SECURITY PROJECT



The Vision and the Steps

On March 2, 2008, Secretary Shultz, Dr. Kissinger, Dr. Perry and Senator Nunn hosted a small, high-level meeting of former senior European foreign policy and security officials in London.

In the summer of 2008, a nuclear weapons expert told the *National Journal*: “The fact that [John] McCain and [Barack] Obama are both speaking about the elimination of nuclear weapons shows you how hard it is to overstate the importance of that op-ed by the four horsemen.”

“The four horsemen” are George Shultz, Henry Kissinger, Bill Perry, and Sam Nunn. “That op-ed” was their essay that ran in the *Wall Street Journal* in early 2007 and was followed-up by a second op-ed in 2008.

The authors said that “the world is now on a precipice of a new and dangerous nuclear era” and that nuclear deterrence is becoming “increasingly hazardous and decreasingly effective.”

They endorsed the vision of a world free of nuclear weapons and called on world leaders “to turn the goal of a world without nuclear weapons into a joint enterprise.”

Finally, they prescribed specific steps that would reduce the threat and lead us toward the vision of a nuclear weapons free world. “Without the bold vision,” they wrote, “the actions will not be perceived as fair or urgent. Without the actions, the vision will not be perceived as realistic or possible.”

The impact was swift and strong.

The New York Times said that the authors “sent waves through the foreign policy establishment.”

The Economist wrote: “They gave political cover to a renewed debate about whether nuclear weapons, credited with keeping peace between the big powers after the 20th century’s two world wars, are now part of the problem.”

The *National Journal* wrote that they “changed the nonproliferation debate in a pen stroke.”

In the 2008 U.S. Presidential campaign, Senator McCain said: “The time has come to take further measures to reduce dramatically the number of nuclear weapons in the world’s arsenals.”

Then-Senator Obama said: “We’ll make the goal of eliminating all nuclear weapons a central element in our nuclear policy.”

UK Prime Minister Gordon Brown said: “We will be at the forefront of the international campaign... to ultimately achieve a world that is free from nuclear weapons.”

Russian President Medvedev has said that, “In accordance with its obligations under the Treaty on the Non-Proliferation of Nuclear Weapons, Russia is fully committed to reaching the goal of a world free from these most deadly weapon[s].”

Indian Prime Minister Manmohan Singh and other high-level Indian officials have reaffirmed the goal of global nuclear disarmament and proposed a series of steps for getting there.

In the United Kingdom, Italy, Germany, Poland, Australia and Norway, senior statesmen have joined together across party lines to publish their own statements about the importance of working toward a world free of nuclear weapons.

Australia and Japan announced a joint commission on disarmament, and declared: “The Commission will also be able to take advantage of... the high-level debate stimulated by the bipartisan and realist case for disarmament recently made by the U.S. statesmen Henry Kissinger, Sam Nunn, William Perry, and George Shultz.”

The vision of a world free of nuclear weapons and the actions required to reach that goal are growing into a global movement.

NTI has launched the Nuclear Security Project (NSP) to build support for these ideas. NTI serves as the coordinator of the Project, responsible for managing project activities and coordinating the work of the authors, in conjunction with the Hoover Institution.

The goal is to get governments to embrace the vision of a world free of nuclear weapons – and to take the specific steps that would both reduce the risk of a nuclear weapon being used and move us toward a nuclear weapons-free world.

More than two-thirds of the living former U.S. secretaries of state, secretaries of defense and national security advisors – spanning the Kennedy, Johnson, Nixon, Ford, Carter, Reagan, Bush, Clinton and Bush Administrations – support the effort. With generous support from the Catherine T. and John D. MacArthur Foundation and the Carnegie Corporation of New York, the NSP has launched a range of activities designed to further build global momentum for the



The Honorable Shirley Williams, House of Lords, United Kingdom; Dr. Sidney D. Drell; former Secretary of State Henry Kissinger; U.K. Foreign Minister David Miliband; former Secretary of State George Shultz, NTI Co-Chairman Sam Nunn and former Secretary of Defense William Perry at the Nuclear Security Project’s London Conference.

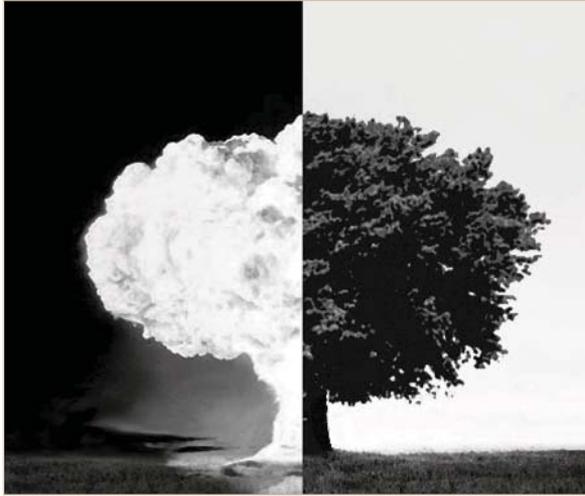
vision and the steps, and to help close key gaps in our understanding of how to reach the ultimate goal of a world free of nuclear weapons.

Selected activities undertaken with this support include:

- ▶ In February 2008, the Nuclear Security Project and the Norwegian government brought together more than 100 experts from 29 countries in Oslo, Norway to sharpen the agenda for the steps that can lead to a nuclear weapons-free world and build international support for it. In March 2008, nearly two dozen former and present foreign and defense ministers, parliamentarians and other experts from throughout Europe met in London to advance this agenda, as well.
- ▶ In May 2008, more than 150 ambassadors and representatives to the Nuclear Non-Proliferation Treaty (NPT) Preparatory Conference meeting in Geneva discussed how the Project can help spur a revival of the nonproliferation consensus.
- ▶ The Nuclear Security Project has also launched three studies to help close gaps in our understanding of how to solve some of the toughest challenges associated with moving toward a world free of nuclear weapons:
 - ▶ **The Verification Study** seeks to address the challenges associated with verification, monitoring and enforcement of a world free of nuclear weapons and the steps needed to accomplish it. Papers on nine key topics have been commissioned and will be published with an executive summary in 2009.
 - ▶ **The Fuel Cycle Study** is engaging experts from industry, government, research and non-governmental institutions in a structured dialogue to consider what would constitute an optimal fuel cycle in a nuclear weapons free world and plausible paths to achieving such a fuel cycle.
 - ▶ **Project “Base Camp”** is working to define and assess alternative “base camps” that could serve as a point of departure for movement to the “mountaintop” and the long-term goal of a nuclear weapons free world, as well as the paths from the base camp to the end goal. A final report is expected to be published in 2009.
- ▶ NTI is making a documentary featuring George Shultz, William Perry, Henry Kissinger and Sam Nunn to raise awareness about nuclear threats and to help build support for the urgent actions needed to reduce nuclear dangers. We look forward to premiering the film in 2009.



Former Russian Minister of Foreign Affairs Igor Ivanov and former U.S. Secretary of State George Shultz meet in London.



**“Achieving the Vision
of a World Free of
Nuclear Weapons”
International
Conference
on Nuclear
Disarmament,
February 26-27, 2008
Oslo, Norway**

In addition to the activities supported by the MacArthur Foundation and the Carnegie Corporation, the NSP is working with policy institutes around the world to build political support and a policy framework for the steps ahead. These institutes include: The Lowy Institute (Australia), the PIR Center (Russia), the Peace Research Institute Frankfurt (Germany), the Stockholm International Peace and Research Institute (Sweden), the Center for Strategic and International Studies (United States), the Institute of Peace and Conflict Studies (India) and the Royal United Services Institute (UK).

Log on to www.nuclearsecurityproject.org to learn more about the Nuclear Security Project's latest activities.

PROJECTS APPROVED OR ONGOING IN 2008 **NUCLEAR SECURITY PROJECT**

Nuclear Security Project: Toward a Vision and Steps for a Nuclear Free World

To help build consensus for reversing reliance on nuclear weapons globally to prevent their spread into potentially dangerous hands, and ultimately end them as a threat to the world by closing analytic gaps and building momentum for action by leaders and experts in key countries around the world.

NTI

Washington, DC, USA

Up to \$3,050,000

2007-2008

In support of the Nuclear Security Project activities described on page 23, the following is a list of the external grants made by NTI in 2008.

International Outreach Planning

To assess the political attitudes in key countries toward the vision and the steps necessary for nuclear disarmament. The project included engaging with international experts and performing background research to assist the international outreach component of the NSP.

Center for Strategic and International Studies

Washington, DC, USA

\$196,166

2008-2009

Fissile Material Control Initiative

To develop and gauge international receptivity to an informal, voluntary regime to govern the physical protection and reduction of weapons-usable fissile materials. Activities included a workshop of project sponsors in Berlin and travel to several countries to record reactions to the initiative.

Center for Strategic and International Studies

Washington, DC, USA

\$40,000

2008-2009

Scientific Findings on CTBT Verification Capabilities

To present to policymakers and members of the non-governmental policy community in Washington the findings of an independent study on the verification capabilities of the Comprehensive Test Ban Treaty Organization's (CTBTO) International Monitoring System (IMS). The study is examining progress in the technology used to verify nuclear explosions since the test ban treaty was negotiated in 1996.

Center for Strategic and International Studies

[American Association for the Advancement of Science]

Washington, DC, USA

\$50,000

2008-2009

Nuclear Delivery Platforms in NATO: A Stocktake

To produce a study on NATO nuclear delivery platforms and what their existing service life portends for the future of the alliance's nuclear mission. The project informs the NSP's European outreach effort by assessing the status of nuclear capabilities within NATO, allowing for the development of tailored strategies to address threat reduction measures in Europe.

Royal United Services

Institute

London, UK

\$30,000

2008-2009

PIR Center Partnership with the NSP

To promote dialogue among Russia's security and nonproliferation community on Russia's nuclear agenda and role in arms control and disarmament efforts. Activities include workshops bringing together US and Russian experts and publications in RUSI's journal, *Security Index*, by US and Russian co-authors. PIR is also creating a section of the organization's website dedicated to discussion about the vision and the steps of a nuclear free world.

PIR Center

\$194,810

Moscow, Russia

2008-2009

Lowy Institute Partnership with the NSP

To hold consultations on nuclear issues with officials, experts and opinion-makers in Australia and key Asian states, host public lectures on the challenge of nuclear non-proliferation and disarmament, and publish original research proposing fresh policy approaches.

Lowy Institute for International Policy

\$85,000

Sydney Australia

2008-2009

PRIF Partnership with the NSP

To conduct studies on transparency in nuclear weapon states, enforcement mechanisms for a nuclear weapons free world, FMCT verification, and the stability of the NPT regime. In addition, PRIF will also advise the NSP in its activities in Europe.

Peace Research Institute

Frankfurt

\$57,200

Frankfurt, Germany

2008-2009

Addressing the Future of Nuclear Weapons

To support a two-day planning meeting for a track-two, trilateral dialogue between India, Pakistan, and China on nuclear disarmament and a coordinated diplomatic approach for Asian nuclear threat reduction measures. Among the topics to be discussed at the meeting are the nuclear doctrines of the three countries, political issues hindering regional nuclear disarmament, and a ban on the production of fissile materials.

Institute for Peace and Conflict Studies

\$34,095

New Delhi

2008

BIOLOGICAL



The Nature of the Threat: A Security Imperative and a Health Imperative

“**The threats arising from natural or deliberately induced disease outbreaks are as dangerous as those arising from nuclear terrorism or accidents.**”

An infectious disease pandemic has significant implications for the security of individuals, nations and the world as a result of death, riots and economic collapse – all of which can destabilize, cripple or topple governments. It is estimated that between 14 and 17 million people die from infectious diseases each year, and this already huge burden will be increased enormously in the event of a pandemic or a major bioterrorism incident. The problem is both a health and a security issue; the security lies in the effect, not the cause.

The threats arising from natural or deliberately induced disease outbreaks are as dangerous as those arising from nuclear terrorism or accidents. In both cases, we are at the crossroads of cooperation or catastrophe. The threat posed by biological agents is complex in nature and requires a break from traditional ways of thinking about prevention, deterrence, non-proliferation and response.

Biological threats can come from various and uncertain origins, and it is important that the full spectrum of biological threats be taken into account. Pathogens can be easily concealed and transported; many are found in nature, as well as in government, university and industry laboratories. Information on the production of biological weapons is increasingly available on the internet and in open scientific literature. There is also the risk of inadvertent release of pathogens, such as through laboratory accidents or research mishaps. Addressing these complex realities requires new approaches to define and implement enduring solutions.

Fortunately, many of the most effective steps for fighting biological attacks are also the very measures needed to fight infectious diseases. Whether a disease is naturally occurring or intentionally caused, the essential elements of effective disease control are to detect, diagnose and take timely measures to contain the spread.

To find solutions to the extraordinarily complex biological threat, NTI is pioneering new approaches that cut across traditional boundaries and challenge conventional approaches toward health and security.

Strategies for Threat Reduction

NTI works to reduce global biological threats through its Global Health and Security Initiative (GHSI).

GHSI focuses on two priority areas for action:

- ▶ Improving the global capacity for the prevention of and preparedness for biological threats through enhanced disease surveillance, early detection and response.
- ▶ Promoting the safe and secure practice of the biomedical sciences by safeguarding access to dangerous pathogens and preventing the misuse of technology and information.

Highlights of NTI's Global Health and Security Initiative for 2008 include: maintaining and expanding regional disease surveillance networks in the Middle East, Southeast Asia and Southern Africa; collaboration with partners, including the World Health Organization (WHO) and the Rockefeller Foundation, to connect operational and nascent disease surveillance networks around the globe in order to sustain and enhance their capabilities; and continued support for the International Council for the Life Sciences, an independent organization whose focus is promoting best practices worldwide in the biological sciences.

As part of its direct-action mission, GHSI has been working with its partners to build core capacities for the WHO's International Health Regulations (IHR), which provide a new global framework for coordination and communication during health emergencies of international concern, and require countries strengthen their existing capacities to detect, assess, notify and respond to disease threats. Establishing effective channels of communication and cooperation prior to an outbreak of disease or a bioterrorist attack is key to mitigation.



Laboratory technician examines specimens.

MIDDLE EAST CONSORTIUM ON INFECTIOUS DISEASE SURVEILLANCE (MECIDS)

The Middle East Consortium on Infectious Disease Surveillance (MECIDS), despite armed conflict and political tension, has continued to bring together public health leaders, academic institutions and private health care facilities in Jordan, Israel and the Palestinian Authority. NTI, initially working with Search for Common Ground, an organization that promotes conflict resolution, helped launch MECIDS in 2003. In January 2007, MECIDS became an independent consortium when an Executive Board was formed with Standard Operating Procedures, a business plan and a rotating Chairmanship. The Chairman of the Executive Board for 2008 was Dr. Adel Belbesi of Jordan. Dr. Assad Ramlawi of the Palestinian Authority is the 2009 Chairman.

Fortunately, MECIDS was functioning effectively when the first outbreak of avian flu was detected in the region, and the MECIDS partnership enabled rapid communication and coordination of efforts to help contain the impact and spread of the disease.

In addition to responding to emerging threats, MECIDS brings together officials from the ministries of health, doctors and scientists for regular cross-border information exchanges, laboratory and risk communications training, and regional scientific conferences.

In August 2008, MECIDS conducted a regional tabletop exercise in Istanbul, Turkey. This regional exercise was the culmination of a set of national exercises to test procedures and cross-border cooperation in response to the challenge of a human influenza pandemic. Key officials from the World Health Organization's headquarters and its European and Eastern Mediterranean offices participated. Observers from the Turkish Ministry of Health also attended.

Through GHSI, MECIDS has received financial support from the World Bank, the Bill & Melinda Gates Foundation and the UK Government, as well as in-kind support from IBM, which has contributed software, hardware and training, and Becton, Dickinson and Company, which has contributed laboratory and medical supplies. Key technical support has been provided by the World Health Organization, including training on the implementation of the International Health Regulations.

MEKONG BASIN DISEASE SURVEILLANCE NETWORK (MBDS)

The Mekong Basin Disease Surveillance Network (MBDS) brings together public health experts and academicians from Cambodia, Thailand, China (Yunnan and Guangxi Provinces), Vietnam, Myanmar and Laos to enhance cooperation in detecting and controlling infectious disease. NTI's Global Health and Security Initiative joined the effort in 2005 after initial support from the Rockefeller Foundation established MBDS in 1999.

MECIDS-IBM TECHNOLOGY WINS COMPUTERWORLD AWARD

In 2008, NTI's Global Health and Security Initiative, in collaboration with IBM and MECIDS, launched a unique technology to enhance data-sharing and minimize the impact of diseases throughout the region. The secure, Web-based portal system, the Public Health Information Affinity Domain (PHIAD), is currently being deployed in the Middle East through the MECIDS network.

This technology provides public health organizations with the right decision-making tools to implement timely, appropriate responses to infectious disease outbreaks – even across geographic and political boundaries. PHIAD uses near-real time information to facilitate fast response and enables the secure exchange of data on both national and international levels with appropriate protection of privacy at all levels.

By having a standards-based model of secure electronic information exchange that integrates public health reporting with the creation of clinical records, members can easily share and exchange key data to monitor and respond to potential outbreaks.

The PHIAD system will enhance the existing regional collaboration at several levels and allow health professionals to stay a step ahead of potentially dangerous disease outbreaks. The technology was recognized by the Computerworld Foundation's honors program in June 2008.

MEKONG BASIN NETWORK FACILITATES POST CYCLONE DISASTER EFFORT

The Mekong Basin Disease Surveillance Network (MBDS) facilitated a post-disaster relief effort in the aftermath of Cyclone Nargis in hard hit Myanmar in May 2008. A Rapid Response team made up of MBDS Thailand representatives participated in a 32-member medical team that assisted refugees in the Myuangmya region, approximately 46 miles from the hardest hit area of Laputta. The team was concerned about outbreaks of infectious respiratory diseases that, without immediate intervention, could spread to neighboring regions. This post-disaster relief effort may not have been mobilized or succeeded in its mission without the existing relationships and collaborative procedures formed through this trusted network.

The Google Foundation awarded a grant to NTI's Global Health and Security Initiative to improve laboratory diagnostic capabilities and train public health frontline workers in South-east Asia, with a focus on the Mekong Basin. GHSI also supports the strengthening of the governance of the network to enable MBDS member countries to work together as a regional network to reduce the burden of infectious disease for their populations. GHSI has created strong relationships with other partners working in the region, including Fondation Merieux.

In 2008, NTI joined with Fondation Merieux to award scholarships to veterinary and epidemiology professionals in Cambodia and Laos that will allow them to earn graduate degrees online while continuing to provide critical health care in their home countries. The two organizations partnered with the University of Edinburgh, United Kingdom to offer Master of Science degrees to improve the health security of the citizens of Laos and Cambodia. Developing in-country health security skills across medicine, veterinary medicine and environmental health and allied professions is a keystone in building capacity to combat the threat of disease outbreaks.

CONNECTING REGIONAL INFECTIOUS DISEASE SURVEILLANCE NETWORKS

In 2008, NTI's Global Health and Security Initiative, with support from The Rockefeller Foundation, began the implementation of a new effort to strengthen and connect regional disease surveillance networks, created at a meeting held in Bellagio, Italy in December 2007, with a plan to continue the activities of a global community of infectious disease surveillance practitioners.

The "Call for Action", a product of the Bellagio 2007 meeting, was launched in January 2008 at the Prince Mahidol Award Conference, a gathering of global leaders in public health held in Bangkok, Thailand. The Bellagio participants called on governments, international inter-governmental organizations and private foundations to provide financial and technical support to enhance and sustain the regional networks, and committed themselves to implement and carry forward a plan for action, in particular:

- ▶▶ To further strengthen national capacity and regional networks based on effective communication through electronic means, by regular meetings and joint projects;
- ▶▶ To promote and enhance the overall global capacity for infectious disease surveillance by connecting the regional networks into a global cooperative activity, including making the December 2007 Bellagio meeting an annual event;
- ▶▶ To develop and encourage collaboration between the human, animal and agricultural sectors to achieve a holistic approach to infectious disease surveillance; and,

- ▶▶ To promote the development of national capacities and new regional networks, particularly in Africa and South Asia.

Their efforts comprise a special focus on supporting nascent networks through shared best practices. With a select group of international experts to oversee the process, GHSI will be establishing working groups to develop strategies and materials for an international conference to be held in early 2010.

INTERNATIONAL COUNCIL FOR THE LIFE SCIENCES (ICLS)

NTI's Global Health and Security Initiative provides continued support for the work of the International Council on the Life Sciences (ICLS). The main purpose of ICLS is to enhance biological security and reduce biological weapons proliferation risks. To do that, ICLS is bringing together experts from around the world in the life sciences to identify critical biological risks to public safety and security, and to make sure that the extraordinary advances in biotechnology of recent decades benefit rather than harm society. ICLS is a membership organization. Among its key tasks are developing and promoting guidelines, best practices, codes of conduct and regulations to manage and reduce the risk that biological science, accidentally or intentionally, might cause harm to human beings, the environment or the economy.

ICLS has taken a regional approach in establishing sustainable groups of experts from governments, academia and private industry. In partnership with the I.M. Sechenov Moscow Medical Academy and NP-TEMPO (a grouping of 17 Russian life science laboratories), ICLS has established a standing International Advisory Group to promote best practices and standards in Russia and Central Asia. Similarly in the Middle East and North Africa region, following a regional conference in Abu Dhabi in November 2007, a core group was set up that has developed a framework for a regional biosafety and biosecurity strategy. This framework will be carried further at the Biosafety and Biosecurity International Conference 2009 (BBIC-09) in Morocco in April.

In the global arena, ICLS has brought private sector CEOs into inter-governmental discussions on the Biological and Toxin Weapons Convention and supported the UN Secretary General's biotechnology initiative.

In addition to NTI's support, ICLS has received support from the Alfred P. Sloan Foundation, the Canadian and U.K. Governments, the John D. and Catherine T. MacArthur Foundation, and the Robert and Ardis James Foundation.



**Dr. Moe Ko Do,
MBDS Regional
Coordinator, Thailand
and Dr. Louise
Gresham, GHSI.**

STRENGTHENING GLOBAL DISEASE SURVEILLANCE

Middle East Consortium on Infectious Disease Surveillance

To improve regional capacity for infectious disease surveillance in the Middle East by developing a food-borne and water-borne disease surveillance system uniting Israel, the Palestinian Authority and Jordan, and by designing an infectious disease epidemiology course to build regional rapid response capabilities in the event of disease outbreaks. Financial support is provided by the World Bank, Gates Foundation and the United Kingdom Foreign and Commonwealth Office.
NTI and others
\$2,204,000
2002-2009

Rapid Outbreak Response Revolving Fund

To create within the World Health Organization an account dedicated to supporting rapid emergency response to infectious disease outbreaks.
World Health Organization
Geneva, Switzerland
\$500,000
2003-2008

Strengthening National Health Preparedness

To assess preparedness for biological and chemical attacks in several nations by establishing and testing a set of international guidelines for preparedness, comparing them against existing public health capabilities that states have in place and making recommendations for improving those capabilities.
World Health Organization
Geneva, Switzerland
\$400,000
2004-2009

Biological Weapons Threat Reduction: Expanding Outbreak Reporting and Education in the New Independent States

To reduce the threat of biological weapons and other emerging infectious diseases in the New Independent States, the International Society for Infectious Diseases will expand the scope of a Russian language-based electronic network (PROMED) that rapidly disseminates information about outbreaks of infectious diseases, including potential biological weapons attacks, to include more physicians, scientists and public health officials throughout the New Independent States.
International Society for Infectious Diseases
Brookline, MA, USA
\$320,475
2005-2008

Developing Diagnostic Kits for Select Biological Agents

To develop rapid diagnostic tests for select biological agents of most significance to Russia, to introduce them to health-care practices and to organize manufacturing of such tests. Once developed, these tests could help fill a critical global need for better diagnostic tests for the detection of infectious diseases.
Moscow State Central Research Institute for Epidemiology of the Health
Ministry of Russia
Moscow, Russia
\$300,000
2005-2008

Creating a Regional Disease Surveillance System in South Asia

To develop a regional disease surveillance network that would initially bring together India, Pakistan and Bangladesh.
Up to \$275,000
2005-2008

Improving Biological Threat Detection and Surveillance in Russia

To convene Russian and international disease control experts in arriving at a consensus on a direct action project to improve the early detection and surveillance of biological threats in Russia.
\$75,000
2006-2008

Joint Training on Laboratory Biosecurity and Biosafety in Egypt

To support a workshop to raise awareness of the threat of bioterrorism and the need for safe and secure handling of dangerous biological materials in bioscience facilities.
Academy of Scientific Research and Technology
Cairo, Egypt
\$70,000
2006-2008

Enhancing the Mekong Basin Disease Surveillance Network (MBDS)

To strengthen national and sub-regional disease surveillance capacity in the Mekong Basin area (Cambodia, China, Laos, Myanmar, Thailand, and Vietnam) by developing human resource and laboratory capacity that operates across borders, responds quickly to regional disease threats, and works to create equity in the national capacities to detect and respond to local outbreaks, and, hence, prevent regional or even global emergencies. Financial support is provided by Google.org.
\$2,500,000
2008-2009

Pandemic Influenza Simulation Exercises in Southeast Asia

To strengthen national and sub-regional disease surveillance capacity in the Mekong Basin area (Thailand, Vietnam, Cambodia, Laos, Myanmar, and China-Yunnan province), and develop a system that operates across borders, responds quickly to regional disease threats, and works to create equity in the national capacities to detect and respond to local outbreaks, and, hence, prevent regional or even global emergencies.
NTI and others
\$610,000
2006-2008

Connecting Regional Infectious Disease Surveillance Networks, Bellagio

To strengthen and create new regional disease surveillance networks by bringing together representatives from infectious disease surveillance networks in Africa, the Americas, Europe and the Middle East in Bellagio, Italy, to share best practices and lessons learned. Financial support is provided by the Rockefeller Foundation.
Up to \$120,000
2007-2008

Connecting Health Organizations for Regional Disease Surveillance (CHORDS)

To implement the Bellagio Call for Action and continue the activities of a global community of infectious disease surveillance practice created by the December 2007 Bellagio meeting. With a select group of international experts to oversee the process, GHSI will establish working groups to develop strategies and materials for an international conference to be held in early 2010. Financial support is provided by the Rockefeller Foundation.
\$250,000
2008-2010

Control of Drug Resistant Tuberculosis in North Korea

To develop a professional exchange with health specialists in North Korea and build capacity for control of drug resistant tuberculosis.
NTI and others
\$300,000
2007-2010

Rapid Response Teams to Myanmar for Post-Cyclone Relief

To provide financial support to the Mekong Basin Disease Surveillance Network (MBDS) to assist in the deployment of Rapid Response Teams to Myanmar in the aftermath of Cyclone Nargis by covering the costs for transportation to/from Myanmar, communication, and translators.
\$30,000
2008

Southern African Centre for Infectious Disease Surveillance

To assist in the development of a consortium that enhances the Southern Africa region's capacity for the detection, identification and monitoring of infectious diseases and thereby contribute to enhancing national capacities of countries in the region for the surveillance of infectious diseases, including emerging and previously unknown diseases. Develop a Secretariat and governance structure for the Southern African Centre for Infectious Disease Surveillance (SACIDS). Initially, the consortium members include academic and research medical and veterinary institutions of the Democratic Republic of Congo, Mozambique, Tanzania, South Africa and Zambia. Financial support is provided by Google.org.
NTI and others
\$500,000
2008-2009

PROMOTING SAFE AND SECURE SCIENCE

AAAS-NTI Fellowship in Global Security

To strengthen scientific expertise in national security policymaking and encourage scientists to pursue careers in this arena, by supporting biomedical/public health experts to work on national security issues in the U.S. government through a one-year fellowship.
American Association for the Advancement of Science
Washington, DC, USA
\$1,261,763
2001-2008

Brucellosis Vaccine Research

To develop a new vaccine, employing former Soviet bioweapons scientists, to contribute to the management of this disease that threatens domestic and wild animal populations around the world.
All-Russian Research Veterinary Institute
Kazan, Russia;
International Science and Technology Center
Moscow, Russia (in conjunction with the U.S. Department of State)
\$600,000
2003-2008

Educating and Training the International Life Sciences Community on Dual-Use Dangers

To assess the best methods for educating and training life scientists about the risks of dual-use technologies and research and to cultivate a project for curriculum development in this area.
Up to \$50,000
2005-2008

Employing Former Bioweapons Scientists in Russia to Manufacture Diagnostic Enzymes for Endemic Infectious Disease Threats

To redirect former bioweapons scientists who were at risk of unemployment due to ongoing bankruptcy procedures at the State Research Center for Applied Microbiology and Biotechnology (SRCAM) Obolensk, by providing them with alternative, long-term employment relevant to their scientific expertise.
SRCAM
Obolensk, Moscow Region, Russia
\$400,000
2005-2008

International Council for the Life Sciences

To support and sustain an organization to promote best practices and standards for biosafety and biosecurity among the Life Sciences Community to reduce potential proliferation of dangerous pathogens and the misuse of technical information.
International Council for the Life Sciences
Washington, DC, USA
\$547,150
2005-2009

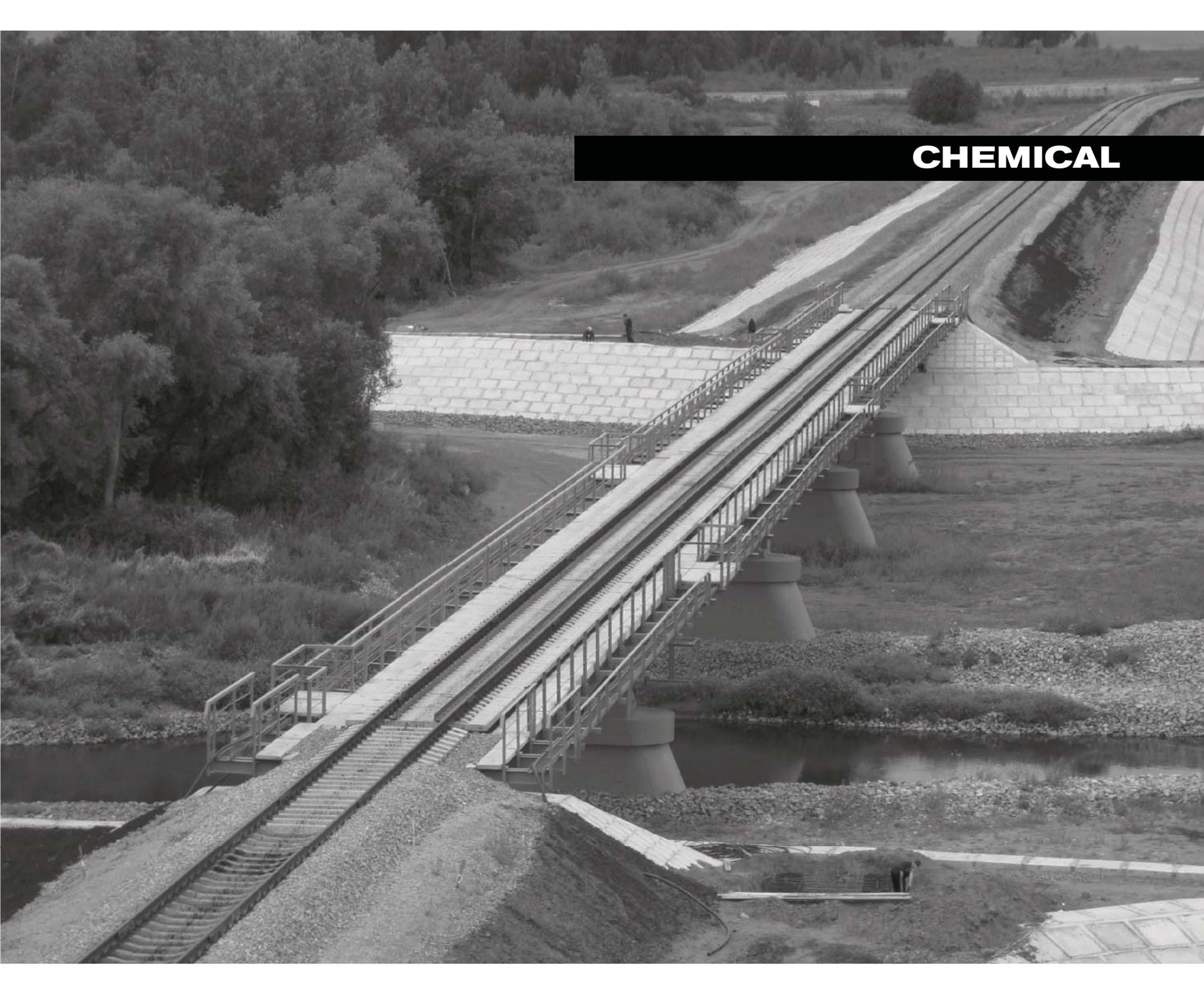
Regional Training Centers for Biological Safety and Security

To develop a comprehensive strategy for establishing regional training centers for biological safety and security in the Middle East/Gulf/North Africa region and eventually in South and South East Asia. The centers will offer life scientists and laboratory staff on-site technical training in the highest biosafety and biosecurity standards and practices, tailored specifically to their work and regional concerns.
NTI and others
\$120,000
2007-2009

Regional Reference Laboratory for Viral Hepatitis

To set up a reference laboratory at the facilities of the State Research Center of Virology and Biotechnology (VECTOR) that will meet all national and international requirements and regulations for diagnostic work involving the use of molecular biological methods.
VECTOR
Koltsovo, Novosibirsk Oblast, Russia
\$325,500
2007-2009

CHEMICAL



The Nature of the Threat

“**...securing and dismantling chemical weapons and securing or redirecting production facilities are essential to reducing terrorist chemical threats.**”

Even minute quantities of agents such as mustard gas, VX and sarin can sicken and kill and could be a very potent terrorist weapon against civilians. Used extensively in World War I and by Saddam Hussein during the Iran-Iraq War of the 1980s, chemical weapons have met widespread international condemnation.

The Chemical Weapons Convention, which came into force in 1997, completely prohibits the development, production, stockpiling and use of chemical weapons. The Treaty also commits the signatories to destroy all of their stockpiles of chemical weapons – but that has proven to be an expensive and technically challenging task.

When the Treaty came into force, the United States and Russia had more than 90 percent of the 71,000 metric tons of the total declared stockpile of chemical weapons. While the Convention called on all states to entirely destroy their stored chemical weapons by 2007, that has not occurred.

According to the Organization for the Prohibition of Chemical Weapons as of January 2009, almost half of the original 71,000 tons has been destroyed, along with roughly one-third of the 8.6 million declared chemical munitions and containers. All other declared chemical weapon stockpiles have been verified and inventoried.

Although Russia and the United States were granted extensions until 2012, the U.S. Government Accountability Office announced that it does not expect Russia to reach 100 percent destruction until 2027, and the United States until 2014.

In addition to the known supplies of more than 6,000 commercial chemical facilities that use, produce or store toxic materials, chemical weapons caches around the world are unaccounted for and may be poorly secured. Many of these facilities are located near densely populated areas and could be vulnerable to a terrorist attack or just as deadly if released.

Inadequately secured chemical weapons stockpiles and commercial facilities are a weak link in the chain of global security that could readily be exploited by terrorists – with deadly results. For that reason, securing and dismantling chemical weapons and securing or redirecting production facilities are essential to reducing terrorist chemical threats.

Shchuch'ye Bridge.

PROJECTS APPROVED OR ONGOING IN 2008 **CHEMICAL**

Supporting Russian Chemical Weapons Destruction

To provide \$1 million, matched by a minimum of \$2 million from other sources, for high-priority infrastructure development for the Shchuch'ye Chemical Weapons Destruction Facility.

Global Partnership Program

*Canada Department of Foreign Affairs and
International Trade*

Ottawa, Canada

\$1,000,000

2001-2008

Strategies for Threat Reduction

SECURING AND DESTROYING CHEMICAL WEAPONS STOCKPILES

NTI recognizes that securing and destroying chemical weapons stockpiles is a key task in reducing the chemical weapons threat. Facilitating the destruction of chemical weapons in Russia remains NTI's top priority, specifically through a destruction facility in Shchuch'ye, Russia that opened in early 2009. The Shchuch'ye facility will eliminate many of Russia's most lethal and proliferation-prone chemical weapons (approximately 1.9 million artillery shells filled with the nerve agents sarin, soman and VX).

The United States, Russia, Canada, the Czech Republic, the European Union, Italy, Norway, Switzerland, and the United Kingdom worked together to build the facility. Part of the facility, a railway completed in September 2008, will safely transport chemical munitions from storage in Planovy to the destruction facility in Shchuch'ye. Canada funded the rail line construction with NTI's contribution of \$1 million toward the effort.

At the opening of the new destruction facility, NTI Board member and U.S. Senator Richard Lugar applauded NTI's role in reducing chemical dangers.

On a larger scale, the U.S. Department of Defense, through the Nunn-Lugar Cooperative Threat Reduction Program, is funding the construction of most of the Shchuch'ye destruction facility, at a cost of approximately \$1 billion.

This infrastructure project is a model for the kind of international cooperation that is essential for reducing the global threats from nuclear, biological and chemical weapons.

**Senator Lugar in
a control room at
the new facility in
Shchuch'ye.**



Report on Nuclear Security Urges Prompt Global Action

Yearly Study Offers Agenda for New Administration

By DAVID E. HOFFMAN
Washington Post Staff Writer

When armed men attacked South Africa's most closely guarded nuclear facility a year ago, they penetrated the detection systems at the perimeter, cut through an electrified fence and broke into the emergency control center, shooting one worker there in the chest before escaping.

The Pelindaba facility holds hundreds of pounds of weapons-grade, highly enriched uranium. Although the attackers last November did not steal any of it, the assault highlights what a new report describes as the increasingly global challenge of keeping nuclear materials from falling into the hands of terrorists.

The South African facility was better protected than dozens of other sites around the world that hold bomb-grade nuclear materials. Yet a team of four armed men made it into the control room and out without being caught.

The report, "Securing the Bomb 2008," the seventh annual study from Harvard University's Belfer Center for Science and International Affairs, is to be released today. The study was commissioned by the Nuclear Threat Initiative, a nonproliferation organization co-chaired by former senator Sam Nunn of Georgia.

President-elect Barack Obama pledged during the campaign to secure all nuclear materials at vulnerable sites within four years. Nunn said the challenge will be to keep that an urgent priority, given so many other competing demands.

"You have to decide whether it is urgent enough and important enough to be on the front burner," Nunn said. "Getting the other

fuel, and many of them have only "the most modest security measures in place — in some cases, no more than a night watchman and a chain link fence," the report says. The South African break-in "is a reminder that nuclear security is a global problem, not just a problem in the former Soviet Union."

In that case, according to the report, the intruders spent 45 minutes inside the secured perimeter of the nuclear compound without being engaged by security forces, then disappeared. It is not known who they were or what they were after. South African authorities arrested three people but released them without charge. The security manager and several of the guards on duty were fired.

South Africa had refused U.S. offers to remove the highly enriched uranium or to help improve security at the facility, the report said.

Mathew Bunn, associate professor of public policy at Harvard University's John F. Kennedy School of Government and author of the report, said many nations need to address weaknesses in guarding bulk supplies of bomb-grade uranium and plutonium. In the past, "almost all the cases of theft are bulk materials," as opposed to finished weapons, he said.

The report notes that "it is a sobering fact that nearly all of the stolen HEU and plutonium that has been seized over the years had never been missed before it was seized," referring to highly enriched uranium.

Russia still possesses "the world's largest stockpiles of nuclear weapons and materials, located in the world's largest number of buildings and bunkers," an estimated 250 structures at dozens of sites, the report found. The study concluded that "some serious weaknesses still remain" in Russia, including widespread insider corruption and

COMMUNICATIONS

Securing the Bomb 2008

MATTHEW BUNN

PROJECT ON MANAGING THE ATOM
BELFER CENTER FOR SCIENCE AND INTERNATIONAL AFFAIRS

JOHN F. KENNEDY SCHOOL OF GOVERNMENT

HARVARD UNIVERSITY

COMMISSIONED BY THE NUCLEAR THREAT INITIATIVE

NOVEMBER 2008

www.nti.org/securingthebomb

Symbols

measured in kilograms)
at nuclear material built
nuclear warhead site
down
verted to low-enriched
security upgrades com

Key

Has plutonium (

Has highly enriched uranium (HEU)

Has both

Countries that have sufficient security to require the highest international Atomic Energy Agency standards.

Raising Public Awareness

“**A concerned, informed, attentive public can be a powerful force for holding governments accountable and spurring greater action, so public outreach and education are a crucial part of NTI’s mission.**”

NTI is a private non-profit organization seeking to reduce the threats of nuclear, biological and chemical weapons. That is an outsized task for a small organization, particularly when the levers of change are almost entirely in the hands of government. This means that success depends not just on what NTI does, but on what we can persuade others to do.

Our goal, ultimately, is to persuade governments to take more urgent, aggressive steps to reduce and eliminate the threats from weapons of mass destruction. We gather facts, analyze threats, address the barriers to change, and propose new policies.

A concerned, informed, attentive public can be a powerful force for holding governments accountable and spurring greater action, so public outreach and education are a crucial part of NTI’s mission. We shine a spotlight on the gap between the threat and the response, show what should be done to close the gaps, and catalyze greater action to reduce the threats.

NTI’s communications activities aim to:

- ▶ Increase the quality and accessibility of information about the threats from nuclear, biological and chemical weapons and what must be done to reduce those threats;
- ▶ Support new thinking and the development of new expertise to reduce the risk of use and prevent the spread of nuclear, biological and chemical weapons;
- ▶ Promote dialogue and common ground solutions to reduce imminent global dangers and take these issues beyond the small group of policymakers and experts who work on them and into the mainstream public policy debate.

Since NTI was founded in 2001, we have relied on communications strategies to promote policy change and shape political opinion in numerous ways. Here are a few examples:

SAFER WORLD ACTION NETWORK: TURNING THE D INTO AN A

The members of the 9/11 Commission issued a stark warning on the threat of a terrorist nuclear attack, and urged the U.S. Government to make an all-out effort to secure weapons of mass

SECURING THE BOMB

In 2001, when U.S. and Russian efforts to secure nuclear weapons and material began to slow, NTI commissioned the first of a series of reports – to be released on the eve of the 2002 Bush-Putin Moscow summit – to report on our progress in locking down nuclear materials. The annual updates – now numbering seven in all – have won readership among policy experts, triggered legislation in Congress, and helped frame the debate for political candidates. The reports, called “Securing the Bomb,” are researched and written under the leadership of Dr. Matthew Bunn at the Project for Managing the Atom of Harvard University’s Belfer Center for Science and International Affairs.

In 2004, when John Kerry noted in a Presidential debate that – at the current pace – it would take 13 years to secure the 600 tons of still unsecured nuclear material in the former Soviet Union, he was drawing his information from the 2004 “Securing the Bomb” report, and *The New York Times* noted that NTI was the source for Kerry’s facts.

The 2008 report declares that the world still faces a “very real” risk that terrorists could get a nuclear bomb. It notes that U.S.-sponsored security upgrades have been completed for approximately 75 percent of the buildings in the former Soviet Union that contain weapons-usable nuclear material, and for roughly 65 percent of Russia’s nuclear warhead sites. But major issues remain, ranging from insider theft and

corruption to chronic underinvestment in nuclear security. The report also provides a frightening survey of nuclear incidents around the world – from the armed break-in at the Pelindaba nuclear facility in South Africa, to a Russian colonel arrested for soliciting bribes to overlook violations of nuclear security rules, to the loose security at many of the research reactors worldwide still using HEU fuel.

The *Washington Post* article on the report highlighted its call for “a global campaign to lock down every nuclear weapon and every significant stock of potential nuclear bomb material worldwide as rapidly as that can possibly be done.”

The report urged President Obama to:

- ▶▶ Appoint a senior White House official, with direct access to the President, to take full-time charge of all efforts focused on preventing nuclear terrorism.
- ▶▶ Launch a fast-paced global campaign to ensure that every nuclear warhead and every kilogram of plutonium and HEU worldwide is protected against the kinds of threats terrorists and criminals have shown they can pose.

NTI Co-Chairman Sam Nunn said: “To do this, we have to build a real nuclear security partnership with Russia and work with all nations to secure stockpiles around the world. This report offers the road-map we need to win the race between cooperation and catastrophe.”

destruction and keep them out of terrorist hands. In its final report card in 2005, however, the commission gave the government a “D” for its efforts.

At NTI, we have always believed that if the public understood the gap between the threat and our response, they would demand action. The non-profit group “Families of September 11” believe the same thing. They approached NTI to suggest working together to help raise public awareness about the threat posed by weapons of mass destruction.

The result became “Turning the D into an A”, a public awareness project focused on reducing the threat of nuclear terrorism and the urgent need to lock down nuclear weapons and materials around the world.

The project included screenings of the NTI-produced nuclear terrorism docudrama “Last Best Chance,” which aired on HBO and has been screened around the world. College-level teaching materials were developed and distributed to more than 200 college professors. Public service announcements were aired. More than 50 briefings were held with Members of Congress, Congressional staffers, and National Security Council staff. In a January 2008 presidential primary debate in New Hampshire, ABC News Anchor Charles Gibson used his first question to ask the candidates’ about their policies to prevent nuclear terrorism.

SHAPING POLITICAL OPINION

The ultimate power to reduce threats from nuclear, biological and chemical weapons comes from heads of state and a country’s lawmakers. So any serious communications plan has to try to shape their views on the subject. We not only have to persuade them on the elements of a good policy, but we also have to convince them that good policy is good politics – that there is substantial public support for reducing nuclear threats.

When public attention on the threat from weapons of mass destruction began to fade after 9/11, NTI helped put it back on the top of the agenda in the 2004 U.S. Presidential campaign through issue advertising, articles, reports, forums, and briefings, so that – as *The New York Times* wrote: “Both candidates [George W. Bush and John Kerry] called nuclear proliferation the greatest threat to American security.”

We believe that NTI also had a role in helping shape the policy debate in the 2008 Presidential campaign, through the NTI-commissioned series of reports on “Securing the Bomb,” researched and written by the Project for Managing the Atom of Harvard University’s Belfer Center for Science and International Affairs (for more information, please see page 42) and the 2007 and 2008 *Wall Street Journal* op-eds by George Shultz, Sam Nunn, Henry

Kissinger and William Perry that re-asserted the vision of a world free of nuclear weapons and outlined the steps to get us there.

During the 2008 campaign, Senator John McCain said: “A quarter of a century ago, President Ronald Reagan declared, ‘Our dream is to see the day when nuclear weapons will be banished from the face of the Earth.’ That is my dream, too.... It is time for the United States to show the kind of leadership the world expects from us, in the tradition of American presidents who worked to reduce the nuclear threat to mankind.”

Then-Senator Obama said: “I’ll lead a global effort to secure all loose nuclear materials around the world during my first term as President. But we need to do much more. It’s time to send a clear message to the world: America seeks a world with no nuclear weapons. As long as nuclear weapons exist, we’ll retain a strong deterrent. But we’ll make the goal of eliminating all nuclear weapons a central element in our nuclear policy. We’ll negotiate with Russia to achieve deep reductions in both our nuclear arsenals and we’ll work with other nuclear powers to reduce global stockpiles dramatically.”

Of course, it’s a tricky business to try to trace the origins of the policy opinions of Presidential candidates, but the urgency of securing nuclear materials around the globe has been the focus on the annual “Securing the Bomb” reports. In the summer of 2008, a nuclear weapons expert at the Union of Concerned Scientists told the National Journal: “The fact that McCain and Obama are both speaking about the elimination of nuclear weapons shows you how hard it is to overstate the importance of that op-ed by the four horsemen [Shultz, Nunn, Kissinger and Perry].” (For more information on the Nuclear Security Project, please see page 23).

WWW.NTI.ORG

“That’s just preaching to the choir!” That familiar line is hauled out whenever someone wants to suggest there’s no value in talking to people who already agree with you. We disagree. We think it’s a great idea to preach to the choir, especially if you have a chance to turn choir members into missionaries.

That’s what we’re doing with our website. You can’t make an argument if you don’t know the facts. NTI’s website is an essential educational and research tool for understanding the global threats of nuclear, biological and chemical weapons and how these threats can be reduced or eliminated. NTI works with The National Journal Group, the Center for Nonproliferation Studies at the Monterey Institute of International Studies and other parties to ensure that

www.nti.org offers authoritative, factual information useful to experts, journalists, policymakers and those new to the subject.

Millions of people from more than 150 countries have visited the site, and our data indicates that more than 30 percent of the daily visits come from return visitors, a strong indicator that people find the information provided to be accurate and useful.

HIGHLIGHTS OF WWW.NTI.ORG

- ▶▶ *Global Security Newswire*, a free, daily news service covering worldwide developments in nuclear, biological and chemical weapons, terrorism and related issues written by the National Journal Group. www.nti.org/gsn
- ▶▶ *Issue Briefs* that offer a short introduction and in-depth analysis of a wide range of international security issues. www.nti.org/issuebriefs
- ▶▶ *Country Profiles* with information on nuclear, biological, chemical and missile programs for more than 35 countries. www.nti.org/countries
- ▶▶ *Self-guided Tutorials* on Biological Warfare Terrorism, the Nuclear Non-Proliferation Treaty and other essential topics. www.nti.org/tutorials
- ▶▶ *Nonproliferation Databases* with the world's most comprehensive open-source information containing current and archived material on proliferation. It includes a wide range of sources including academic and trade journals, IAEA documents and much more. www.nti.org/db
- ▶▶ *Nonproliferation Databases* with the world's most comprehensive open-source information containing current and archived material on proliferation. It includes a wide range of sources including academic and trade journals, UN and IAEA documents and much more. www.nti.org/db

The NTI website is a gateway to the best information about weapons of mass destruction, proliferation, terrorism and related topics and is updated frequently. Bookmark the site at www.nti.org.



PROJECTS APPROVED OR ONGOING IN 2008 **COMMUNICATIONS AND EDUCATION**

Global Security Newswire

To support a daily news service – available exclusively on the NTI website –with original reporting and a comprehensive snapshot of the day's global news on nuclear, biological and chemical weapons, terrorism and missile issues.

National Journal Group, Inc.

Washington, DC, USA

\$955,000

2008-2009

Online Research Center and Library

To build, expand and update a comprehensive online research library with information, analysis and educational materials about the threats from nuclear, biological and chemical weapons. The library builds on the most comprehensive open-source nonproliferation databases in the world and brings together a range of expert opinion and analysis on these issues.

Monterey Institute of International Studies Center for Nonproliferation Studies

Monterey, CA, USA

\$649,000

2008-2009

Securing the Bomb

To track the progress and budgets of global nuclear security programs with an annual report and website and make recommendations for accelerating the pace and effectiveness of threat reduction work.

Project on Managing the Atom, Belfer Center for Science and International Affairs John F. Kennedy School of Government

Harvard University Cambridge, MA, USA

\$351,105

2006-2008

Global Health and Security Outreach

To develop and implement outreach activities to advance the agenda and activities of NTI's Global Health and Security Initiative.

NTI Washington, DC, USA

\$75,000

2004-2008

South Asian Security and WMD Website Module

To continue a weapons of mass destruction module on the Institute of Peace and Conflict Studies website that draws from South Asian, Chinese and Central Asian sources and provides comprehensive news analysis and reference materials relating to nuclear, chemical and biological weapons and to support research, workshops and publications on nonproliferation and nuclear, biological and chemical threats.

Institute of Peace and Conflict Studies New Delhi, India

\$334,800

2004-2008

Safer World Action Network

To engage and expand the network of individuals interested in efforts to reduce the threats from nuclear, biological and chemical weapons and materials with the goal of inspiring individuals to become personally involved in efforts to expand and accelerate the pace of work to reduce these threats.

NTI Washington, DC, USA

\$500,000

2006-2008

Research and Analysis

To conduct research and analysis to support NTI projects and activities.

Monterey Institute of International Studies Center for Nonproliferation Studies

Monterey, CA, USA

\$155,885

2004-2008

Public Education Project: Turning the “D” into an “A”

To support NTI and Families of September 11 in raising public awareness about nuclear dangers throughout the United States. Activities include screenings and discussions about the film *Last Best Chance*, television public service announcements, and distributing educational materials that can be used in university courses to professors across the country.

NTI Washington, DC, USA

Up to \$300,000

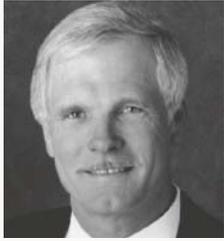
2006-2008

BOARD OF DIRECTORS



Not shown: Dr. Alexei Arbatov, Senator Pete V. Domenici, General Eugene E. Habiger, Minister Igor S. Ivanov and Ronald L. Olson

TED TURNER



Throughout his career, Ted Turner has received recognition for his entrepreneurial acumen, sharp business skills, leadership qualities, and unprecedented philanthropy.

Whether in billboard advertisement, cable television, sports team ownership, sailing, environmental initiatives or philanthropy, Turner's vision, determination, generosity and forthrightness have consistently given the world reason to take notice.

Turner is co-chairman of the Nuclear Threat Initiative; chairman of the Turner Foundation, Inc., which supports efforts for improving air and water quality, developing a sustainable energy future to protect the earth's climate, safeguarding environmental health, maintaining wildlife habitat protection, and developing practices and policies to curb population growth rates; chairman of the United Nations Foundation, which promotes a more peaceful, prosperous and just world; and a partner in the Ted's Montana Grill restaurant chain, which operates more than 55 locations nationwide.

Turner is also chairman of Turner Enterprises, Inc., a private company, which manages his business interests, land holdings and investments, including the oversight of two million acres in 12 states and in Argentina, and more than 45,000 bison head.

SENATOR SAM NUNN



Former U.S. Senator Sam Nunn is Co-Chairman and Chief Executive Officer of the Nuclear Threat Initiative. He served as a United States Senator from Georgia for 24 years, from 1972-1996.

Senator Nunn attended Georgia Tech, Emory University and Emory Law School, where he graduated with honors in 1962. After active duty service in the U.S. Coast Guard, he served six years in the U.S. Coast Guard Reserve. He first entered politics as a Member of the Georgia House of Representatives in 1968.

During his tenure in the U.S. Senate, Senator Nunn served as Chairman of the Senate Armed Services Committee and the Permanent Subcommittee on Investigations. He also served on the Intelligence and Small Business Committees. His legislative achievements include the landmark Department of Defense Reorganization Act, drafted with the late Senator Barry Goldwater, and the Nunn-Lugar Cooperative Threat Reduction Program, which provides assistance to Russia and the former Soviet republics for securing and destroying their excess nuclear, biological and chemical weapons.

In addition to his work with NTI, Senator Nunn has continued his service in the public policy arena as a distinguished professor in the Sam Nunn School of International Affairs at Georgia Tech and as chairman of the board of the Center for Strategic and International Studies in Washington, DC.

CHARLES B. CURTIS



Charles B. Curtis is the President and Chief Operating Officer of the Nuclear Threat Initiative.

Before joining NTI, Mr. Curtis served as the Executive Vice President and Chief Operating Officer of the United Nations Foundation and was a partner in Hogan & Hartson, a Washington-based

law firm with domestic and international offices.

Mr. Curtis served as Under Secretary and, later, Deputy Secretary of the U.S. Department of Energy from February 1994 to May 1997. He was Chief Operating Officer of the Department and, among other duties, had direct programmatic responsibility for all of the Department's energy, science, technology and national security programs.

Mr. Curtis is a lawyer with more than 15 years' practice experience and more than 18 years in government service. He was a founding partner of the Washington law firm Van Ness Feldman. Mr. Curtis served as Chairman of the Federal Energy Regulatory Commission from 1977 to 1981 and has held positions on the staff of the U.S. House of Representatives, the U.S. Treasury Department, and the Securities and Exchange Commission. He is a current member of the Council on Foreign Relations.

DR. ALEXEI ARBATOV



Alexei Arbatov is one of Russia's most important scholars and intellectual leaders in the fields of international relations and international security. He is the head of the Center for International Security of the Institute of World Economy and International Relations of the Russian Academy of Sciences and

is a Scholar-in-Residence and Chair of the Nonproliferation Program of the Carnegie Moscow Center.

Dr. Arbatov has played a leading role in the politics of post-Soviet Russia, as a member of the Russian Parliament (Duma) from 1994 to 2003 and as vice chairman of the liberal YABLOKO Party from 2001 to the present. While in Parliament, he was deputy chairman of the Duma Defense Committee.

The author of numerous books and articles on global security, disarmament and Russian military reform, Dr. Arbatov is a member of the International Commission on Nuclear Non-proliferation and Disarmament and the Weapons of Mass Destruction Commission, the vice-president of the Luxembourg Forum, a member of the Governing Board of the Stockholm International Peace Research Institute (SIPRI), the international advisory board of the Geneva Centre for the Democratic Control of Armed Forces (DCAF), and the board of the Center for Nonproliferation Studies of the Monterey Institute of International Studies.

SENATOR PETE DOMENICI



Former Senator Pete V. Domenici is a Senior Fellow at the Bipartisan Policy Center. He served as a United States Senator from New Mexico longer than any other person (1973-2009). During his 36 years in the Senate, Domenici served as Chairman and Ranking Member of the Senate Budget Committee and the Appropriations Subcommittee of Energy and Water Development. In addition, he served as Chairman and Ranking Member of the Senate Energy and Natural Resources Committee.

As Chairman of the Senate Energy and Natural Resources Committee and the Senate Energy and Water Development Appropriations Subcommittee, he promoted legislation to bolster U.S. efforts to prevent the proliferation of nuclear weapons and the components to build such weapons. He worked in support of the evolving mission of the U.S. national laboratories and other high-technology research facilities.

Senator Domenici supports greater U.S. energy independence, encouraging the development of the domestic oil and natural gas industries, while calling for a reduction in the country's reliance on foreign sources of energy. He has led national efforts to assure that nuclear energy, which now provides over one-fifth of our nation's electricity, remains a strong option for clean, reliable production.

SUSAN EISENHOWER



Susan Eisenhower serves as President of the Eisenhower Group, Inc. which provides strategic counsel on political and business projects. Eisenhower was a founding director and the first president of the Eisenhower Institute where she became known for her work in the former Soviet Union and in the energy field. She is currently the Eisenhower Institute's Chairman of Leadership and Public Policy Programs.

Eisenhower has consulted for major corporations and has served on many government task forces, including the NASA Advisory Council, the Department of Energy's Baker-Cutler Commission on U.S. funded nuclear nonproliferation programs in Russia, and the National Academy of Sciences' standing Committee on International Security and Arms Control. She is currently a member of the Secretary of Energy's Task Force on Nuclear Energy. Eisenhower has authored three books, two of which, *Breaking Free* and *Mrs. Ike*, appeared on regional bestseller lists. She has also edited four collected volumes on regional security issues, most recently *Partners in Space: U.S.-Russian Cooperation After the Cold War*.

Eisenhower has been a Fellow at Harvard's JFK School of Government's Institute of Politics and a Distinguished Fellow at the Nixon Center. She currently sits on the board of the Energy Future Coalition and is an advisor to the U.S. Chamber of Commerce's new Institute for 21st Century Energy and the Air Force Academy's Eisenhower Center for Space and Defense Studies.

She serves as a regular commentator on television and has provided analysis for CNN, MSNBC, Fox News, PBS, the BBC, and all three network morning programs.

AMBASSADOR ROLF EKÉUS



Ambassador Rolf Ekéus is Chairman of the Board of the Stockholm International Peace Research Institute. From 2001 to 2007, he served as High Commissioner on National Minorities for the Organization for Security and Cooperation in Europe.

He has held a number of diplomatic posts, including Swedish Ambassador to the United States from 1997 to 2000 and head of the United Nations Special Commission on Iraq (UNSCOM).

Ambassador Ekéus has spent the last two decades working on international nonproliferation issues. From 1991 to 1997, he served as Executive Chairman of the United Nations Special Commission on Iraq. In that post, he was responsible for work to eliminate the Iraqi infrastructure for nuclear and other weapons of mass destruction. He served as Ambassador and Head of the Swedish delegation to the Conference on Security and Cooperation in Europe and as Permanent Representative of Sweden to the Conference on Disarmament (1983-1989) and as Chairman of the international negotiations on the Chemical Weapons Convention. He is a Member of the Board of the International Commission on Missing Persons. He also serves as Chairman of the Swedish Pugwash Network. He was a Member of the Advisory Board on Disarmament of the Secretary-General of the United Nations, the Canberra Commission on Nuclear Weapons and the Tokyo Forum on Disarmament.

His work in this field was recognized with the Waterler Peace Price from the Carnegie Foundation in 1997.

GENERAL EUGENE E. HABIGER



General Eugene E. Habiger (U.S. Air Force, Retired) has more than 35 years of experience in national security and nuclear operations. In his previous assignment as the Commander in Chief of United States Strategic Command, he was responsible for all U.S. Air Force and U.S. Navy strategic nuclear

forces supporting the national security strategy of strategic deterrence. In this position, he established an unprecedented military-to-military relationship with his Russian counterparts, which resulted in extraordinary confidence building and openness. This initiative was the centerpiece of a 60 Minutes II segment in February 2000 and a CNN special in October 2000.

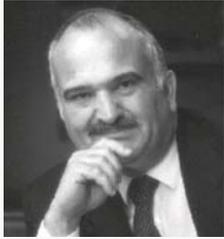
General Habiger is a Distinguished Fellow and Policy Adviser with the University of Georgia's Center for International Trade and Security, where he assists with the Center's international programs aimed at preventing weapons proliferation and reducing nuclear dangers.

Prior to joining the Center, General Habiger was the President/CEO of the San Antonio Water System, where he was responsible for the general operations of the System along with the strategic long-range business and water resources planning for the ninth largest city in the United States.

He also worked as the Department of Energy's Director of Security and Emergency Operations. As the Department's "Security Czar", he was charged by the Secretary with changing the security culture at the Energy Department and establishing a program to reenergize and restore confidence in the Department's Security Program.

He is a command pilot with more than 5,000 flying hours, primarily in bomber aircraft. During the Vietnam War, he flew 150 combat missions. He is also the Chairman of the Board of the Armed Services YMCA, serves on the Fisher House Foundation of San Antonio and is a Senior Fellow with the Gorbachev Foundation.

HRH PRINCE EL HASSAN BIN TALAL



A pluralist, believing in consensus and respect for others, His Royal Highness Prince El Hassan bin Talal, believes in societies in which all people can live, work and function in freedom and with dignity. This goal has been the moving force behind his interest and involvement in humanitarian and inter-

faith issues, with particular stress on the human dimension of conflicts. His Royal Highness has initiated, founded and is actively involved in a number of Jordanian and international institutes and committees. He co-chaired the Independent Commission on International Humanitarian Issues in 1983 and is currently President and Patron of the Arab Thought Forum and President Emeritus of the World Conference of *Religions for Peace*. In 2002, His Royal Highness served as a Commissioner on Legal Empowerment for the Poor.

Prince El Hassan is the author of 10 books: *A Study on Jerusalem* (1979) (English); *Palestinian Self-Determination* (1981) (English, Arabic); *Search for Peace* (1984) (English, Arabic); *Christianity in the Arab World* (1994) (English, Arabic, French, Greek, Spanish, Russian, German, Swedish); *Essere Musulmano* – Co-authored with Alain Elkann – (2001) (Italian, French, Spanish); *To Be A Muslim* (English – released 2003); *Q and A: Contemporary Issues*, (2003) (Arabic); *Continuity, Innovation and Change: Selected Essays* (2001); *In Memory of Faisal I: The Iraqi Question* (2003) (Arabic); and *El Hassan bin Talal Collected Works: Volume One*, 2007 (Arabic).

IGOR S. IVANOV



Igor S. Ivanov is a Professor at Moscow State Institute for International Relations. Previously, he served as Minister of Foreign Affairs, from 1998 to 2004, and Secretary of the Security Council of the Russian Federation, from 2004 to 2007. Minister Ivanov holds the rank of Ambassador Extraordinary and Plenipotentiary. He took part in the work of several U.N. General Assembly sessions, many international conferences, and in particular, co-chaired the Bosnia settlement talk in Dayton, Ohio. From 1991 to 1993, he represented the USSR and then Russia as Ambassador to Spain.

Minister Ivanov has also worked as a researcher at the Institute of World Economy and International Relations, USSR Academy of Sciences. He has a Ph.D. in history. He has published a number of books and articles on the history of Russian foreign affairs and foreign policy, which are translated into many languages. He regularly attends political and scientific gatherings both in Russia and abroad to speak on the most topical international issues. Minister Ivanov was been honored with numerous Russian and foreign orders.

PIERRE LELLOUCHE



Pierre Lellouche has been a practicing attorney in Paris and a member of the French National Assembly since 1993. He served as President of the NATO Parliamentary Assembly (2004-2006) and as the National Secretary of his party (in charge of Defense), the Union Mouvement Populaire (UMP).

He was in charge of the Defense and Foreign Policy Platform of Nicolas Sarkozy during the French Presidential campaign of 2006-2007. He is currently President Sarkozy's Secretary of State for European Affairs. He also teaches geopolitics at Galatassanay University (Istanbul).

From 1989 to 1995, he was Diplomatic Advisor to French President Jacques Chirac, and he has held a number of positions in his party on foreign affairs and defense issues. Previously, Lellouche was a Co-founder and Deputy Director of the French Institute for International Affairs. He has taught and published widely on political-military affairs, including serving as a columnist for *Le Point* and *Newsweek*.

He is a vice chairman of the Atlantic Partnership and served as a member of the Trilateral Commission and the Council of the International Institute for Strategic Studies. Mr. Lellouche also serves as a Member of the Board of Directors of the Foundation du Futur, and as a member of the editorial board of the *European Journal of International Affairs* and the *Journal of Arms Control and Security Studies*.

He is the author of several books including: *La France et l'OTAN - de la Guerre Froide à la Guerre d'Afghanistan* (2009), *Illusions Gauloises* (2006), *Le Nouveau Monde* (1992), *La République Immobile* (1998) and *La France et les Bombes* (2000). He was educated in Paris and at Harvard Law School, where he earned his masters and doctorate degrees.

SENATOR RICHARD G. LUGAR



U.S. Senator Richard G. Lugar (R-Indiana) is the Ranking Republican of the Senate Foreign Relations Committee and a well-known leader in international security issues. A proponent of free trade and economic growth, Senator Lugar was first elected to the U.S. Senate in 1976 and won a sixth term in 2006

with 87 percent of the vote.

Senator Lugar has been instrumental in Senate ratification of treaties that reduce the world's use, production and stockpiling of nuclear, chemical and biological weapons.

In 1991, he forged a bipartisan partnership with then-Senate Armed Services Chairman Sam Nunn to create a cooperative program to destroy weapons of mass destruction in the former Soviet Union. To date, the Nunn-Lugar program has deactivated more than 7,500 nuclear warheads that were once aimed at the United States.

As chairman of the Agriculture Committee, Senator Lugar built bipartisan support for 1996 federal farm program reforms, ending 1930's era federal production controls. He initiated a biofuels research program to help decrease U.S. dependency on foreign oil and led initiatives to streamline the U.S. Department of Agriculture, reform the food stamp program and preserve the federal school lunch program.

Combining his experiences on the Foreign Relations and Agriculture Committees and recognizing that energy security impacts every aspect of life in the United States, from the cars we drive and how much we pay at the gas pump to our vulnerability to foreign terrorism and our relationships with other countries, Senator Lugar has launched the Lugar Energy Initiative.

Senator Lugar has received numerous awards and 41 honorary degrees. In 2006, *Time* magazine listed Lugar as one of the top 10 Senators. He manages his family's 604-acre Marion County corn, soybean and tree farm. Before entering public life, he helped run the family's food machinery manufacturing business in Indianapolis.

DR. JESSICA TUCHMAN MATHEWS



Dr. Jessica Tuchman Mathews is President of the Carnegie Endowment for International Peace, an international research organization with offices in Washington, DC, Moscow, Beijing, Beirut and Brussels. Dr. Mathews, who holds a PhD in molecular biology, has held positions in the executive and legislative branches, in management and research in the nonprofit arena and in journalism.

She was a Senior Fellow at the Council on Foreign Relations from 1993 to 1997 and served as Director of the Council's Washington program. During that time her *Foreign Affairs* article, "Power Shift", was chosen by the editors as one of the most influential in the journal's 75 years. From 1982 to 1993, Dr. Mathews was founding Vice President and Director of Research of the World Resources Institute, an internationally known center for policy research on environmental and natural resource management issues.

She served on the editorial board of *The Washington Post* from 1980 to 1982, covering energy, environment, science, technology, health and arms control issues. Later, she became a weekly columnist for *The Washington Post*.

From 1977 to 1979, she was the Director of the Office of Global Issues of the National Security Council, covering nuclear proliferation, conventional arms sales policy, chemical and biological warfare and human rights. In 1993, she returned to government as Deputy to the Under Secretary of State for Global Affairs.

RONALD L. OLSON



Ronald L. Olson is a partner in the Los Angeles office of Munger, Tolles & Olson LLP. Mr. Olson has practiced law with the firm since 1968. Mr. Olson also is a director of Berkshire Hathaway, Edison International, City National Corporation, The Washington Post Company, and Western Asset Trusts.

He serves as a director of several non-profits, including the RAND Corporation (formerly chair), the Mayo Clinic, the Council on Foreign Relations, and the California Institute of Technology. Mr. Olson's practice involves a combination of litigation and corporate counseling. He counsels individual executives and boards of directors in a range of matters, including transaction and corporate governance issues.

Mr. Olson received his B.S. degree from Drake University in 1963, his J.D. degree from the University of Michigan in 1966, and a Diploma in Law from Oxford University, England, in 1967, at which time he was the recipient of a Ford Foundation fellowship. Mr. Olson has received a number of awards for public service and for public service and pro bono activities.

JUDGE HISASHI OWADA



Judge Hisashi Owada was appointed to the International Court of Justice in The Hague in early 2003. Before being appointed to this post, he served as President of the Japan Institute of International Affairs, Advisor to the Minister for Foreign Affairs of Japan, Senior Advisor to the President of

the World Bank and Professor of Law and Organization at the Waseda University Graduate School in Japan.

One of his country's most respected diplomats, Judge Owada previously served as Vice Minister for Foreign Affairs of Japan, Permanent Representative of Japan to the Organization for Economic Cooperation and Development in Paris and as Permanent Representative of Japan to the United Nations in New York.

In the academic field as a professor of international law and organization, Judge Owada has taught at Tokyo University since 1963, and at the law schools of Harvard University, Columbia University and New York University. He is a *membre* of the *Institut de Droit International* and professor at Leiden University. Judge Owada is the author of numerous writings on international, legal and political affairs.

WILLIAM PERRY



William J. Perry, a senior fellow at the Hoover Institution, is the Michael and Barbara Berberian Professor at Stanford University, with a joint appointment in the School of Engineering and the Institute for International Studies, where he is co-director of the Preventive Defense Project, a research collaboration

of Stanford and Harvard Universities. His previous academic experience includes professor (halftime) at Stanford from 1988 to 1993, when he was the co-director of the Center for International Security and Arms Control. He also served as a part-time lecturer in the Department of Mathematics at Santa Clara University from 1971 to 1977.

Dr. Perry was the 19th United States secretary of defense, serving from February 1994 to January 1997. His previous government experience was as deputy secretary of defense (1993–94) and undersecretary of defense for research and engineering (1977–81).

His business experience includes serving as a laboratory director for General Telephone and Electronics (1954–64); founding and serving as the president of ESL (1964–77); executive vice-president of Hambrecht & Quist (1981–85); and founding and serving as the chairman of Technology Strategies and Alliances (1985–93). He serves on the board of directors of Anteon International Corporation and several emerging high-tech companies and is chairman of Global Technology Partners.

Dr. Perry received his B.S. and M.S. degrees from Stanford University and his Ph.D. from Pennsylvania State University, all in mathematics. He is a member of the National Academy of Engineering and a fellow of the American Academy of Arts and Sciences. From 1946 to 1947, Perry was an enlisted man in the Army Corps of Engineers and served in the Army of Occupation in Japan. He joined the Reserve Officer Training Corps in 1948 and was a second lieutenant in the Army Reserve from 1950 to 1955.

He has received numerous awards and decorations from U.S. and foreign governments, nongovernmental organizations and the military, including the Presidential Medal of Honor in 1997.

DR. NAFIS SADIK



Dr. Nafis Sadik has consistently called attention to the importance of addressing gender, population and development issues and, particularly, the inclusion of women in decision-making and carrying out of development policy. From April 1987 to December 2000, Dr. Sadik served as Executive

Director of the United Nations Population Fund (UNFPA), with the rank of Under Secretary General. She was the first woman to head a major UN voluntarily-funded program. In 2001, Dr. Sadik was appointed as Special Adviser to the UN Secretary-General and is the UN Secretary-General's Special Envoy for HIV/AIDS in Asia-Pacific.

Dr. Sadik came to the United Nations after a distinguished career in Pakistan, where she served as Director-General of the Central Family Planning Council. Since beginning her career as a physician in 1954, Dr. Sadik has taken on a number of increasingly challenging leadership roles in the family planning field. She first served as a civilian medical officer in charge of women's and children's wards in various Pakistani armed forces hospitals before directing hospitals and eventually heading the Planning and Training Division, the government agency charged with national family planning program.

Dr. Sadik was educated at Loreto College, Calcutta, India; received a doctor of medicine degree from Dow Medical College, Karachi, Pakistan; and completed further studies at Johns Hopkins University. She is the recipient of numerous international awards and honors, most notably, the 2001 United Nations Population Award for her contribution to population issues and improving the health of women and children of the global community.

PROFESSOR AMARTYA SEN



Amartya Sen is a world-renowned economist, scholar, philosopher and author. He has done groundbreaking research in a number of areas, including social choice theory, political and moral philosophy and decision theory. Awarded the "Bharat Ratna," the highest honor given by the President of

India, Professor Sen's work in economics has also been recognized with a Nobel Prize.

Professor Sen is Lamont University Professor and Professor of Economics and Philosophy at Harvard University. Until recently he was Master of Trinity College, Cambridge. Earlier, he was the Drummond Professor of Political Economy at Oxford University and a Fellow of All Souls College. Prior to that, he was Professor of Economics at Delhi University and at the London School of Economics.

Professor Sen has researched and written books in a number of wide-ranging fields, including economics, philosophy, decision theory and social choice theory. His work has covered welfare economics, theory of measurement, development economics, moral and political philosophy and the economics of peace and war. Professor Sen's books, which have been translated into many languages, include *The Argumentative Indian*; *Identity of Violence: The Illusion of Destiny*; *Rationality and Freedom*; *Collective Choice and Social Welfare*; *On Economic Inequality*; *Poverty and Famines*; *Choice, Welfare and Measurement*; *Resources, Values and Development*; *On Ethics and Economics*; *The Standard of Living*; *Inequality Reexamined* and *Development as Freedom*.

Born in Santiniketan, India in 1933, Professor Sen studied at Presidency College in Calcutta, India and at Trinity College, Cambridge. He is an Indian citizen.

RT. HON. PROFESSOR SHIRLEY WILLIAMS



Rt. Hon. Professor Shirley Williams is Co-Founder of the Liberal Democrats and is a Member of the UK House of Lords, where she was Leader of the party from 2001 to 2004. She is Professor Emeritus of Elective Politics at the John F. Kennedy School of Government at Harvard University and advises the Prime Minister on issues of nuclear proliferation.

Baroness Williams began her career as a journalist for *The Daily Mirror* and *The Financial Times* and in 1960 became Secretary of the Fabian Society. Earlier in her career, she was a Member of the House of Commons and served as a Labour cabinet minister of Education and Science. She became Baroness Williams of Crosby in 1993 and was spokesperson for the Liberal Democrats on Foreign and Commonwealth Affairs in the Lords from 1998 to 2001.

Baroness Williams past endeavors include: directing Project Liberty, which focused on Eastern Europe; a member of the Advisory Council to the UN Secretary General on the Fourth World Women's Conference; a member of the European Commission's Comite de Sages on social and civil rights and President of Chatham House (Royal Institute of International affairs), 2002–2006.

Baroness Williams is a Governor of the Ditchley Foundation and the Kennedy School's Belfer Center for Science and International Affairs. She is a Trustee of the Century Foundation in New York and the IPPR in London. She is a member of the Council on Foreign Relations International Advisory Committee and serves on several other boards, including the Moscow School of Political Studies and the International Commission on Nuclear Non-Proliferation and Disarmament.

She is the author of several books including *Politics is for People* (1981), *A Job to Live* (1985) and *God and Caesar* (2003). She is the recipient of 12 honorary doctorates and a frequent broadcaster.

PROFESSOR FUJIA YANG



Professor Fujia Yang, academician of the Chinese Academy of Sciences, is an internationally renowned nuclear physicist who currently serves as the sixth Chancellor of the University of Nottingham, one of the United Kingdom's leading research universities, and the Vice Chairman of the Chinese Association for Science & Technology.

Born in Shanghai, Professor Yang graduated from Fudan University in 1958 with a degree in physics. He went from his initial appointment as a Teaching Assistant, to a Professorial Chair in Physics, to the Presidency of the University of Fudan from 1993-1999. He served as Director of the Shanghai Institute of Nuclear Research of the Chinese Academy of Sciences from 1987-2001, was Chairman of the Shanghai Science and Technology Association from 1992-1996 and was the founding president of the Association of University Presidents of China from 1997 to 1999.

Dr. Yang's work has taken him to positions around the globe, including visiting professorships at the Neils Bohr Institute in Copenhagen, Denmark, State University of New York at Stony Brook, Rutgers University, and Tokyo University.

Professor Yang served as a council member representing China on the Association of East Asia Research Universities and was a member of the International Association of University Presidents and the Association of University Presidents of the Pacific Rim. He holds honorary degrees from Soka University, Tokyo, Japan; the State University of New York; the University of Hong Kong; the University of Nottingham; and the University of Connecticut.

Advisors to the Board of Directors

WARREN E. BUFFETT



Warren E. Buffett, who has been concerned about the threats from weapons of mass destruction for four decades, serves as an Advisor to NTI's Board of Directors.

Mr. Buffett is Chairman of the Board and Chief Executive Officer of Berkshire Hathaway Inc., a holding company owning subsidiaries engaged in a number of diverse business activities and controlled by him since 1965. Berkshire Hathaway Inc.'s business activities include the underwriting of property and casualty insurance and a wide variety of manufacturing, retailing and service companies.

Mr. Buffett started out as an investment salesman and securities analyst, and early in his career, he created his own investment partnership.

Mr. Buffett also serves as a Director of The Washington Post Company and is a life trustee of Grinnell College and The Urban Institute. Mr. Buffett attended the Woodrow Wilson High School in Washington, DC, the Wharton School of Business at the University of Pennsylvania and in 1950 received his B.S. from the University of Nebraska. He earned his M.S. in Economics from Columbia University in 1951.

DAVID A. HAMBURG



David A. Hamburg is DeWitt Wallace Distinguished Scholar at Weill Cornell Medical College. He is president emeritus at Carnegie Corporation of New York, where he served as president from 1982 to 1997. A medical doctor, Hamburg has a long history of leadership in the research, medical, and psychiatric fields.

He has been a professor at Stanford University and Harvard University, as well as President of the Institute of Medicine, National Academy of Sciences.

He was a member of the U.S. Defense Policy Board and co-chair with former Secretary of State Cyrus Vance of the Carnegie Commission on Preventing Deadly Conflict. The Commission published many books and monographs in its five-year life (1994-99), covering diplomatic, political, economic and military aspects of prevention. Distinguished scholars and practitioners contributed on a worldwide basis.

He was a member of President Clinton's Committee of Advisors on Science and Technology. Most recently, Dr. Hamburg chaired two parallel committees at the United Nations and European Union on the prevention of genocide—one reporting directly to the UN Secretary-General and the other to Javier Solana.

Dr. Hamburg also serves on the Advisory Board of the Center for Preventive Action of the Council on Foreign Relations, the Advisory Council of Stanford's Freeman Spogli Institute of International Studies, the Harvard International Advisory Council and is Distinguished Presidential Adviser on International Affairs, National Academy of Sciences. He is the author of *Today's Children: Creating a Future for a Generation in Crisis* (1992); *No More Killing Fields* (2002); and *Learning to Live Together* (2004). His current book, *Preventing Genocide: Practical Steps toward Early Detection and Effective Action* was published in spring 2008.

SIEGFRIED S. HECKER



Siegfried S. Hecker is co-director of the Stanford University Center for International Security and Cooperation, Senior Fellow of the Freeman Spogli Institute for International Studies, and Professor (Research) in the Department of Management Science and Engineering. He is also director emeritus at the Los Alamos National Laboratory/University of California, where he served as director from 1986-1997 and senior fellow until July 2005. He received his B.S., M.S., and PhD degrees in metallurgy from Case Western Reserve University.

His current professional interests include plutonium research, nuclear weapons policy, cooperative nuclear threat reduction, and global nonproliferation and counter terrorism. He is a member of the National Academy of Engineering and serves on the National Academy of Sciences Committee on International Security and Cooperation Nonproliferation Panel. He is a foreign member of the Russian Academy of Sciences. He is also a member of the Council on Foreign Relations, fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, The Metallurgical Society, ASM International, and an Honorary Member of the American Ceramics Society. He serves as an advisor to the Civilian Research and Development Foundation.

FREDERICK ISEMAN



Frederick Iseman is the Chairman and Managing Partner of Caxton-Iseman Capital Inc., which he founded in 1993 in partnership with Caxton Associates.

Caxton-Iseman's companies currently have combined sales of \$5 billion, cash flow of \$550 million, and approximately 75,000 employees.

Mr. Iseman is chairman of Caxton-Iseman's portfolio companies: Ply Gem Industries (housing components), Buffets, Inc. (restaurants), Valley National Gases (industrial gas distribution), Prodigy Health Group (health care services), American Residential Services (heating and ventilation), Electrograph Systems (flat screen media), and CoVant (federal information technology). He is also a member of the Advisory Board of investment firm STAR Capital in London.

In addition, Mr. Iseman is a Board member of the International Rescue Committee and the Academy for Educational Development, and a member of the International Council of the Belfer Center for Science and International Affairs (John F. Kennedy School of Government, Harvard University). Mr. Iseman is a major supporter of the Yale Center for Genocide Studies and Stanford University's Preventive Defense Fund. He is also a Harold Pratt Fellow of the Council on Foreign Relations.

Mr. Iseman is on the Board of Directors of the New York City Opera and the Glimmerglass Opera. He is a major supporter of medical research at Columbia-Presbyterian Medical Center, including the Wharton Institute, the Taub Institute for Brain Research and other disciplines, including cancer research and immunology. He has published articles in *The New York Times*, *Harper's Magazine* and *The New Yorker*. Mr. Iseman has a B.A. in English Literature from Yale College (1974), where he is a member of the Elizabethan Club. He resides in New York with his two children.

GEORGE F. RUSSELL, JR.



George Russell built the Frank Russell Company from one part-time secretary in 1958 to one of the world's leading investment advisory firms. He served as chairman from 1958 until the firm was sold to Northwestern Mutual Life in 1999. Today, the company guides more than 1,900 clients in 44 countries with assets exceed-

ing more than \$2.4 trillion, and manages \$171 billion in funds. The company is often recognized by the stock market index The Russell 2000.

Internationally known as an advocate for narrowing the gap between the "haves" and the "have nots", Mr. Russell has a focus on a number of challenges: the promotion of globalization, the destruction of nuclear waste, the strengthening of U.S.-Russian relations, ground-level humanitarian projects and bridging the current divide between Muslims and non-Muslims in America.

Currently, Mr. Russell is Chairman of the EastWest Institute, One Nation (a project working to change the perceptions of Islam and Muslims in America), The National Bureau of Asian Research, The Pacific Health Summit, Nuclear Fuel Cycle Technologies, Inc., The Russell Family Foundation, Threshold Group, and Honorary Co-Chairman of the Business Humanitarian Forum.

Officers & Staff*

Sam Nunn

*Co-Chairman and Chief Executive Officer
(See biography in Board of Directors section)*

Charles B. Curtis

*President and Chief Operating Officer
(See biography in Board of Directors section)*

Joan Rohlifing

*Senior Vice President for Programs
and Operations*

Ms. Rohlifing joined NTI after spending six years in a number of senior positions with the U.S. Department of Energy. She served as Senior Advisor for National Security to the Secretary of Energy and Director of the Office of Nonproliferation and National Security. She took a nine-month assignment in New Delhi, India, in the wake of nuclear tests in South Asia, to advise the U.S. Ambassador on nuclear security issues. Ms. Rohlifing also has served on the staff of the U.S. House Armed Services Committee and at the U.S. Department of Defense.

Charlotte S. Atkinson, ACA, CPA

Treasurer and Chief Financial Officer

Ms. Atkinson joined NTI from Deloitte, where she was an Audit Senior Manager. She has more than nine years experience auditing not-for-profits, financial services and service organizations. Ms. Atkinson is a Certified Public Accountant and a member of the American Institute of Certified Public Accountants. She is also a Chartered Accountant and a member

of the Institute of Chartered Accountants in England and Wales. She holds a BSc(Hons) in Physics from the University of Bristol and a Master's degree in International Studies from the University of Birmingham, UK.

Laura S.H. Holgate

Vice President for Russia/New Independent States (NIS) Programs

Ms. Holgate joined NTI after serving in a number of senior positions in the federal government. She managed the Nunn-Lugar Cooperative Threat Reduction program at the U.S. Department of Defense, which provides assistance to Russia and the New Independent States in securing and destroying excess nuclear, chemical and biological weapons and materials. She also served as Director of the Office of Fissile Materials Disposition at the U.S. Department of Energy. Ms. Holgate has received numerous public service awards and is a member of the Council on Foreign Relations and the International Institute of Strategic Studies. She is President of Women in International Security and sits on advisory panels of the Pacific Northwest National Laboratory and the Oak Ridge National Laboratory.

Mark A. Kitchens

Chief Communications Officer

Mr. Kitchens joined NTI after serving as Senior Vice President for Communications and Strategy at AARP. During his tenure he was a fre-

* NTI Staff as of June 30, 2009

quent guest on broadcast television as a leading voice on issues affecting health care and financial security. Kitchens served in Operation Iraqi Freedom as a principal spokesman and strategic communications advisor for General Tommy R. Franks at U.S. Central Command. He was decorated for his service and was featured in a documentary film that examined the role of military public affairs and the media in the early days of the war. He held several political positions including Deputy Press Secretary for National Security for Senator John Kerry's 2004 Presidential Campaign, primary White House spokesperson to online media for domestic issues and as aide to Congressman Pete Geren (D-TX). He was named PR Week's 40 under 40 top communications professionals. Kitchens holds a Bachelor of Science from Texas Christian University and a Masters of Arts from George Washington University.

Terence Taylor

Vice President, Global Health and Security Initiative

Mr. Taylor has held leadership positions at The International Institute for Strategic Studies (IISS), the United Kingdom's Ministry of Defense and the United Nations. Mr. Taylor established the U.S. office of the IISS and served as its first President and Executive Director for five years. He was a career officer in the British army with experience in many parts of the world including UN peacekeep-

ing and counter-terrorist operations. He is an expert on the impact of advances in science and technology on international security policy, with a special emphasis in risk assessment and non-proliferation. He is a former Science Fellow at Stanford University's Center for International Security and Cooperation. Mr. Taylor is also the President and Director of the International Council for the Life Sciences (ICLS).

Robert E. Berls, Jr., PhD

Senior Advisor for Russia/NIS Programs, Director of the Moscow Office

Dr. Berls brings to NTI a background in Soviet/Russian energy and nuclear weapons issues. As a Colonel in the U.S. Air Force, he served as Air Attaché at the U.S. Embassy in the 1980s. During the Clinton Administration, he was Special Assistant to the Secretary of Energy for Russia/NIS Programs. Before joining NTI, he was Vice President for Business Development and Government Relations for a U.S. oil company.

Matthew Dupuis

Research Associate

Mr. Dupuis joined NTI in spring 2009 after working in the International Security Program at the Center for Strategic and International Studies. At CSIS, he worked on projects relating to strengthening multilateral cooperation to fight proliferation and identifying potential technical and political pathways for countries seeking nuclear weapons. He received a BA

in communications and political science from Texas Lutheran University in 2006.

Tatiana Elleman

Program Associate

Prior to joining NTI, Ms. Elleman worked on a number of Cooperative Threat Reduction programs in the former Soviet Union, including Cooperative Biological Research and the Biotechnology Engagement Program. She was employed by Raytheon Technical Services Company with subsequent positions at the Monterey Institute of International Studies and the CUBRC's Center for International Science & Technology Advancement. Ms. Elleman graduated from the Udmurt State University in Izhevsk, Russia with a Masters degree in linguistics. She is fluent in English and Russian.

Louise S. Gresham, PhD, MPH

Director, Health Security and Epidemiology, Global Health and Security Initiative

Dr. Gresham previously served as the Senior Epidemiologist for San Diego County's Health and Human Services Agency with more than 20 years of experience conducting and supervising infectious disease surveillance and response activities. Before coming to NTI, she was the Director of the San Diego State University Center for Public Health Security. Dr. Gresham brings expertise in national and international disease surveillance systems, including the U.S. Mexico Border Infectious Disease Surveillance

program and the Middle East Consortium on Infectious Disease Surveillance. Dr. Gresham is an Associate Research Professor of Public Health at San Diego State University and co-founder of the Global Emergency Preparedness and Response Master of Science.

Catherine O'Brien Gwin

Director of Communications

Ms. Gwin came to NTI from the law firm of King & Spalding, where she served as former Senator Sam Nunn's Director of Communications and Public Policy. She previously served as Senator Nunn's Press Secretary in the U.S. Senate and the spokesperson for the Senate Armed Services Committee. She has a Bachelor of Arts in Journalism from Auburn University.

Diane G. Hauslein

Director of Administration

Ms. Hauslein joined NTI following a 21-year career in the field of legal management, including finance, human resources, facilities/equipment management, technology and marketing. Most recently, Ms. Hauslein served as the Director of Administration for the Washington, DC office of an international law firm co-managed by James Hall, former Chairman of the National Transportation Safety Board.

Corey Hinderstein

*Director of Special Projects,
International Program*

Ms. Hinderstein came to NTI from the Institute for Science and International Security (ISIS), where she was the Deputy Director of the Institute. Her research has focused on the intersection of technical and policy issues related to the dangers posed by nuclear proliferation. Ms. Hinderstein is a Phi Beta Kappa graduate of Clark University and is Vice-President of the Northeast Regional Executive Committee of the Institute for Nuclear Materials Management.

Paul Kaczmarek

*Grants Manager, Global Health and
Security Initiative*

Mr. Kaczmarek holds a Master of Arts degree from the Russian and East European Institute at Indiana University and a Bachelor of Arts degree in History from Holy Cross College. Before joining NTI, Mr. Kaczmarek worked in the field of refugee resettlement in the United States as an employment specialist and grants administrator.

Claire Lehman

Development Associate

Prior to returning to NTI, Ms. Lehman served as a Field Organizer for the Barack Obama Florida Campaign for Change and at a private equity firm focused on U.S. defense, aerospace, and federal government sectors. She previously held positions with NTI's Global Health and Secu-

urity Initiative, the International Council for the Life Sciences and the International Institute of Strategic Studies-U.S. Ms. Lehman holds a B.A. from the University of Maryland.

Alexander Nikitin

Director of On-Line Communications

Prior to joining NTI, Mr. Nikitin pursued a PhD in Comparative Literature at Stanford University. He has held teaching positions at the Monterey Institute of International Studies and Carnegie Mellon University. He grew up in Russia and received his undergraduate education at Moscow State University and later at Dartmouth College. He has a Bachelor of Arts from Dartmouth College. Mr. Nikitin is fluent in English and Russian, and proficient in French and Italian.

Mariah Richardson

*Program Associate, Global Health and
Security Initiative*

Ms. Richardson holds a Bachelor of Arts in Philosophy and Policy Journalism from Duke University and has worked as a writer and research assistant in the global health arena. Ms. Richardson also serves on the advisory board of a non-profit health and education organization based in East Africa, providing guidance on program strategy and fundraising.

Major Robert E. Schultz, USAF (Ret.), PMP

Senior Program Officer, Russia/NIS Programs

Major Schultz joined NTI after a military career in strategic nuclear operations and strategic offensive arms threat reduction. He brings extensive program implementation experience from the U.S. Department of Defense's Nunn-Lugar Cooperative Threat Reduction program, where he was involved in the disposition of Russian strategic missiles. He also served as a Minuteman ICBM Flight Commander and as an Operations Planner on the Strategic Air Command's Airborne Command Post "Looking Glass." Major Schultz is a certified Project Management Professional (PMP) and holds a Master's Certificate in Applied Project Management from Villanova University.

Lina Shamsadin

Program Associate

Ms. Shamsadin holds a Bachelor of Sciences in Biology from La Roche College, Pennsylvania. Prior to joining NTI, she worked as Project Coordinator at the National Atomic Energy Commission (NATEC) in Sana'a, Yemen. Ms. Shamsadin provides administrative, programmatic and linguistic support. She is fluent in English, Arabic and French.

Bryan K. Wilkes

Director of Programs and Outreach

Mr. Wilkes was previously the Director of Public Affairs at the U.S. National Nuclear Security Administration (NNSA). Prior to NNSA, he held several senior staff positions in both the legislative and executive branches of the U.S. government. He holds a Bachelor of Science from the University of Delaware, a Master of Arts in National Security and Strategic Studies from the U.S. Naval War College, and a diploma from the College of Naval Command and Staff at the Naval War College. He received NNSA's Silver Medal and numerous other public service awards.

Isabelle Williams

Program Officer, International Program

Ms. Williams came to NTI from the Partnership for Global Security, where she managed the next generation nonproliferation program. She was previously research associate at the Chemical and Biological Arms Control Institute and held successive positions at the International Institute for Strategic Studies in London.

NTI ADMINISTRATIVE STAFF

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Cover photo: Benjamin Rondel/Getty Images

Back cover image: IAEA

The day after an attack, what would we wish we had done?

Why aren't we doing it now?

Our work at NTI is driven by these questions. The threats from nuclear, biological and chemical weapons are growing, and governments are not doing enough to prevent an attack. Don't sit on the sidelines.

We are in a race between cooperation and catastrophe. Terrorists are racing to get nuclear, biological and chemical weapons. We should be racing to stop them. You can help.

Support NTI's unique work to combat the most urgent security threats of the 21st century.

WHAT DOES NTI DO WITH DONATIONS?

Your gift supports projects that create paths for governments and other organizations to follow. Many projects address high-risk situations involving nuclear, biological and chemical weapons and materials.

In many cases, gifts to NTI are matched by other donors or serve as the catalyst for government or foundation support. In this way, your generosity is leveraged many times over to provide the most results.

You can give directly to projects in these areas:

REDUCE NUCLEAR DANGERS

Acquiring nuclear weapons and materials is the hardest step for terrorists to take and the easiest step for us to stop. By contrast every subsequent step in the process—building the bomb, transporting it and detonating it—is easier for terrorists to take and harder for us to stop. Nuclear materials are stored around the world, some without proper security. Support NTI's efforts to lock down and secure these dangerous materials around the world.

MEET AN URGENT NEED TO REDUCE THESE GLOBAL THREATS

Sometimes projects emerge immediately and require fast action and implementation. A gift can be made to allow NTI to fill urgent risk reduction needs.

COMBAT BIOLOGICAL THREATS

The potential destructive power of biological terrorism is enormous, yet the opportunity for access to dangerous pathogens can be fairly routine and inexpensive. Support NTI's Global Health and Security Initiative to promote science security and strengthen global disease surveillance, early detection and rapid response.

LOCK DOWN AND DESTROY CHEMICAL WEAPONS

Help NTI advance efforts to secure and destroy chemical weapons, eliminate the infrastructure that produced them and redirect know-how to peaceful purposes.

RAISE PUBLIC AWARENESS

An informed and engaged public can be a powerful force to getting governments to act. NTI's work to raise public awareness is reducing global threats from nuclear, biological and chemical weapons by shining a spotlight on the tremendous gap between the threats and the global response and catalyzing greater action to reduce those threats.

You can contribute to NTI by:

- ▶▶ Making an on-line credit card donation on NTI's secure website at www.nti.org/donate
- ▶▶ Directing a gift from family foundations or charitable funds.
- ▶▶ Designating NTI in workplace giving (e.g., Federated Campaign, United Way).
- ▶▶ Giving gifts of appreciated stock or securities or other appreciated assets such as real estate.

NTI is recognized by the U.S. Internal Revenue Service as a 501(c)(3) charity, and donations in the United States are tax-deductible to the full extent of the law. Please consult your tax advisor to learn how these benefits apply.

“I believe that the greatest danger facing our nation and the world is the global threat from nuclear, biological and chemical weapons. In my view, the global community has not committed the resources necessary to close the dangerous gap between the threat and the response and must do more. NTI has shown that private resources can be leveraged to get governments around the world to do more, and I’m pleased to support its efforts.”

Warren Buffett

Chairman of the Board and CEO of Berkshire Hathaway, Inc.
Advisor to NTI’s Board of Directors



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