



Is preventing
catastrophic
terrorism
a priority?

Or an
afterthought?

ANNUAL REPORT 2004



**If it's an afterthought,
after what?**

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The threat of terrorism with nuclear, biological and chemical weapons is real, urgent and at our doorstep.

Consider these facts:

- ▶ As far back as 1993, terrorist organizations were caught trying to obtain material to make a nuclear bomb.
- ▶ The hardest part of making a nuclear weapon is getting the nuclear weapons material—plutonium or highly enriched uranium—to make a bomb. The most likely way a terrorist will get these essential bomb ingredients is through illicit purchase or theft.
- ▶ Large quantities of nuclear material are at risk in locations around the world. In Russia alone, the Cold War legacy of the Soviet Union left approximately 30,000 nuclear warheads and enough highly enriched uranium and plutonium to make nearly 60,000 more, as well as tens of thousands of people with weapons or materials knowledge whose jobs were no longer assured. And enough highly enriched uranium to make hundreds of nuclear weapons is scattered among more than 100 research facilities in more than 40 countries.
- ▶ Nearly 15 years after the end of the Cold War, the United States and Russia continue to maintain thousands of nuclear weapons on hair-trigger alert, increasing the risk it was designed to reduce by creating an unacceptable risk of accidental or unauthorized launch.

**Letter from the Co-Chairmen
2004 NTI Annual Report**

- ▶ The destructive power of biological weapons is enormous, yet opportunities for access to dangerous pathogens are abundant. Large gaps in global infectious disease surveillance and response networks leave us vulnerable to disease outbreaks and limit our ability to mitigate the effects of a naturally occurring or deliberate attack.
- ▶ Chemical weapons, such as sarin and mustard gas, can sicken and kill, yet at least 61 thousand metric tons of these weapons have yet to be destroyed. Large stocks of chemical weapons are stored with inadequate security.

We are in a race between cooperation and catastrophe.

We founded NTI in January 2001 because we recognized these growing threats from nuclear, biological and chemical weapons, and that governments were not doing enough to protect us. We envisioned a new kind of organization that takes action to reduce these global threats by developing new ideas for combating these threats and carrying out direct action projects that show the way. Some examples include:

Eliminating surplus nuclear material. NTI is helping the government of Kazakhstan blend down highly enriched uranium at nuclear power plants and research reactors so that it cannot be stolen or diverted for use in nuclear weapons.

Building effective global health surveillance and response capabilities. To be prepared against infectious dis-

ease threats—whether from naturally occurring diseases or a deliberate act of biowarfare—NTI is helping to build a regional disease surveillance network in the Middle East.

Helping to eliminate chemical weapons. U.S. and Russian chemical weapons destruction efforts are behind schedule because of technological disputes, bureaucratic delays and a lack of funding. Every day that these weapons are not destroyed gives another day to the terrorists to try to steal them. At the Shchuch'ye, Russia site alone, there are 1.9 million shells containing enough deadly doses of chemicals to kill billions. NTI is working with the Canadian government to build a railroad that will transport chemical weapons shells slated for destruction from their storage site to the destruction facility.

Governments have most of the resources and authority to address global threats so it is not just what NTI can do that matters—it's also what NTI can persuade others to do. Our focus is on leverage. This approach has enabled us to motivate governments and private organizations to invest additional resources and take additional action to increase global security.

For example, the International Atomic Energy Agency's work to help member states strengthen the physical security of nuclear materials worldwide was vastly underfunded. NTI took action in 2002 to finance this crucial work by contributing to and leveraging additional support for the IAEA's newly created Nuclear Security Fund. NTI's \$1.15 million contribution was immediately matched by the U.S. government and has helped to leverage over \$35 million from more than a dozen countries.

NTI has also been able to motivate governments and individuals to take action by raising public awareness about the

threats posed by nuclear, biological and chemical weapons. We have found creative ways to get the message out through new communication channels. In March 2004, NTI commissioned a short, feature film dramatizing the nuclear terrorism threat. The film draws attention to the gap between the threat of nuclear terrorism and the current pace of work to lock down nuclear weapons and materials.

The terrorists who planned and carried out the attacks on September 11th showed a willingness to kill indiscriminately, limited only by the capacity of the weapons available to them. NTI is committed to reducing these threats now, before the world suffers a catastrophic attack on innocent lives.

We are in a race between cooperation and catastrophe. We are determined to win this race. But we cannot do it without your support and help. Join us in working for a safer world.



Sam Nunn
Co-Chairman



Ted Turner
Co-Chairman

WORKING
FOR
A
SAFER
WORLD

ABOUT NTI

NTI's mission is to reduce the risk of use and prevent the spread of nuclear, biological and chemical weapons.

Founded in January 2001, NTI is a global initiative that combines its influential voice with direct action projects to catalyze greater, more effective action by governments, international organizations and other private organizations.

Global Leaders Working Toward a Common Mission

NTI brings together global leaders with different ideological views around a common mission to take immediate action to reduce the risk that nuclear, biological or chemical weapons are ever used again.

Co-chaired by philanthropist Ted Turner and former U.S. Senator Sam Nunn, NTI is governed by an international Board of Directors with members from the United States, Russia, India, Pakistan, China, Japan, Jordan, Sweden, France and the United Kingdom. Board members include two sitting U.S. Senators, a former U.S. Secretary of Defense, a member of the Russian Duma, a member of the Jordanian Royal Family, the President of the NATO Parliamentary Assembly, a member of the British House of Lords, a Nobel prize-winning economist, the former commander of U.S. nuclear strategic

forces and other experts in security issues. Warren Buffett, CEO of Berkshire Hathaway Inc., Dr. David Hamburg, President Emeritus of the Carnegie Corporation of New York, Dr. Siegfried Hecker, former Director of Los Alamos National Laboratory, Dr. Joshua Lederberg, President-Emeritus at the Rockefeller University in New York and George Russell, Chairman Emeritus, Russell Investment Group serve as Advisors to the Board of Directors.

NTI's staff includes experts in international affairs, nonproliferation, communications, security and military issues, public health and medicine, who have operational experience in their areas of specialty.

Leadership and Action to Strengthen Global Security

NTI provides new thinking by drawing attention to nuclear, biological and chemical risks and by shaping and promoting new concepts for risk reduction. Through direct action projects that show the way, NTI creates new paths for governments and private organizations to take action to prevent the use of nuclear, biological and chemical weapons.

NTI carries out this work through four programs: Russia/New Independent States, Regional, Biological and Communications. NTI has offices in Washington, DC, USA and Moscow, Russia.

GLOBAL CLEANOUT AND SECURE INITIATIVE

Terrorists seeking nuclear weapons materials may not necessarily look where there is the most material; they may go where the material is most vulnerable. The chain of global security is only as strong as the security at the weakest, worst-defended site. That's why it is necessary to lock down nuclear weapons and materials around the world.

NTI has used its voice, influence and direct action projects to advocate for the creation of a "Global Cleanout and Secure" initiative to prevent terrorists from acquiring the raw material for a nuclear weapon from insecure civilian facilities. NTI helped spotlight the need for this initiative through speeches, in media interviews and in numerous meetings with senior government and International Atomic Energy Agency (IAEA) officials. NTI also commissioned a series of publications by Harvard's Managing the Atom Project that highlighted the gaps in nuclear materials security and the inability of existing government programs to fill those gaps. NTI took direct action to address this threat through several projects, including providing \$5 million in 2002 to support the cooperative removal of highly enriched uranium (HEU) from a research reactor—two and a half bombs worth of HEU from the Vinca research reactor near Belgrade, Yugoslavia. NTI also supported a feasibility study of commercial purchase and blend-down of HEU in Ukraine and an initiative to secure and reduce HEU stocks in Kazakhstan.

Progress:

- ▶▶ Following Project Vinca, the United States, Russia and the IAEA undertook similar operations in Bulgaria, Romania, Uzbekistan and the Czech Republic and announced the development of a schedule, supported in part by an NTI grant to the IAEA, to return all Soviet-origin fresh HEU fuel to Russia by the end of 2005.
- ▶▶ In November 2003, the U.S. Department of Energy (DOE) created the Nuclear and Radiological Threat Reduction Task Force, launching a comprehensive risk assessment of radiological and fissile materials worldwide.
- ▶▶ IAEA Director General ElBaradei urged U.S. President Bush to launch a Global Cleanout initiative during a March 2004 meeting.
- ▶▶ In May 2004, U.S. Secretary of Energy Spencer Abraham announced the Global Threat Reduction Initiative (GTRI), combining a number of programs previously dispersed around the DOE into a single office, identifying \$450 million in funding over a decade and setting milestones for reducing risks of fissile and radiological materials distributed around the globe.
- ▶▶ In September 2004, Russia and the United States sponsored the first GTRI Partners' Conference, gathering nearly 600 representatives from over 90 countries. At this conference, Secretary Abraham announced a \$3 million pledge to the IAEA for GTRI technical cooperation efforts.



This Vinca critical assembly research apparatus once operated on weapons-grade HEU fuel. As a result of Project Vinca, it has been converted to proliferation-resistant low enriched uranium fuel.

WMD CRISIS SIMULATION

One challenge in stimulating governments to take action is getting leaders to understand that the threat of terrorism with nuclear, biological and chemical weapons is real. Scenario-based exercises help leaders recognize the urgency of working to reduce this threat.

Black Dawn

In May 2004, working with 21 organizations from 16 countries, NTI, in partnership with the Center for Strategic and International Studies (CSIS), hosted Black Dawn, a nuclear terrorism exercise in Brussels, Belgium. The exercise was designed to help leaders grapple with the challenges associated with preventing terrorist use of a nuclear weapon and the consequences of failing to prevent an attack. More than 50 current and former senior European and NATO officials as well as experts from more than nine international organizations participated.

An activity of NTI/CSIS's Strengthening the Global Partnership project, Black Dawn differed from other high-level exercises in that it emphasized prevention rather than response, specifically focusing on actions that European governments and institutions can take to prevent terrorists from acquiring and using nuclear, biological or chemical weapons and materials.

NTI/CSIS has been invited to conduct the exercise for officials at NATO Headquarters, for the NATO parliamentarians and for policymakers and experts in Russia.

Atlantic Storm

To illustrate the threats posed by biological terrorism, NTI has joined with other foundation partners to support a table-top exercise which simulates a deliberate smallpox attack on the nations of the transatlantic community. The Center for Biosecurity of the University of Pittsburgh Medical Center organized the Atlantic Storm exercise which simulates simultaneous smallpox outbreaks in several major European cities followed by attacks on the United States. In the exercise, participants, including former heads of state and senior officials from nine countries, play the heads of their respective nations and make decisions under this crisis scenario—debating how limited supplies of vaccines would be shared among affected nations and the advisability of closing borders and quarantining cities.

This exercise aims to foster greater awareness among policymakers and the public about significant gaps in capabilities to address the bioterrorism threat.



Senator Richard Lugar, an interpreter, Ambassador Vladimir Lukin and NTI Co-Chairman Sam Nunn urging the formation of a global coalition of nations working to prevent catastrophic terrorism. May 2002.



G8 leaders and guests meeting in Sea Island, Georgia. June 2004.

GLOBAL PARTNERSHIP AGAINST CATASTROPHIC TERRORISM

NTI invested its resources and influential voice to develop and promote the idea of a Global Partnership Against Catastrophic Terrorism to prevent terrorists from obtaining nuclear, biological and chemical weapons and materials. This effort included convening leading experts to shape the concept, presenting key recommendations to senior U.S. and Russian government officials and opinion leaders and focusing international attention on the issue through a 2002 conference in Moscow on the heels of the May 2002 Bush-Putin summit and prior to the Group of Eight (G8) meeting in Canada.

NTI took action to bolster political support for global threat reduction through its Strengthening the Global Partnership project with the Center for Strategic and International Studies, to engage a coalition of 21 non-governmental security organizations from 16 countries. Through this coalition, NTI continues to challenge global leaders to expand their commitments to cooperative threat reduction projects.

Progress:

- ▶▶ In June 2002, leaders from the G8 announced the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction with a commitment of \$20 billion over ten years.
- ▶▶ By the June 2004 Global Partnership summit, an additional 13 members had joined for a total of 21 nations plus the European Union.
- ▶▶ In the same year, the United States took advantage of its G8 Presidency to advance the idea that the original \$20 billion pledge was a starting point that donors should expand upon—a recommendation that had been made by NTI's Strengthening the Global Partnership project.
- ▶▶ By the end of 2004, 16 nations plus the European Union had pledged a total of \$19.1 billion.

MIDDLE EAST CONSORTIUM FOR INFECTIOUS DISEASE SURVEILLANCE

Global disease surveillance enables early detection and rapid response of infectious disease outbreaks—whether the outbreaks are naturally occurring or the result of bioterrorism. As a pilot project for developing disease surveillance networks and fostering better cooperation among countries in conflict, NTI and Search for Common Ground are advancing the Middle East Consortium for Infectious Disease Surveillance (MECIDS).

The goal of MECIDS is to improve the ability of nations in the Middle East to detect and respond to disease outbreaks and bioterrorism. MECIDS brings together public health experts and Ministry of Health officials from Israel, Jordan, Egypt and the Palestinian Authority, with advisors from the World Health Organization, the Sandia National Laboratories and other American and European organizations.

As their first project, MECIDS members agreed to establish a surveillance system for food borne disease outbreaks in Israel,



Jordanian Central Public Health Laboratory in Amman. NTI is exploring options to include this lab in a Middle East infectious disease regional surveillance network.

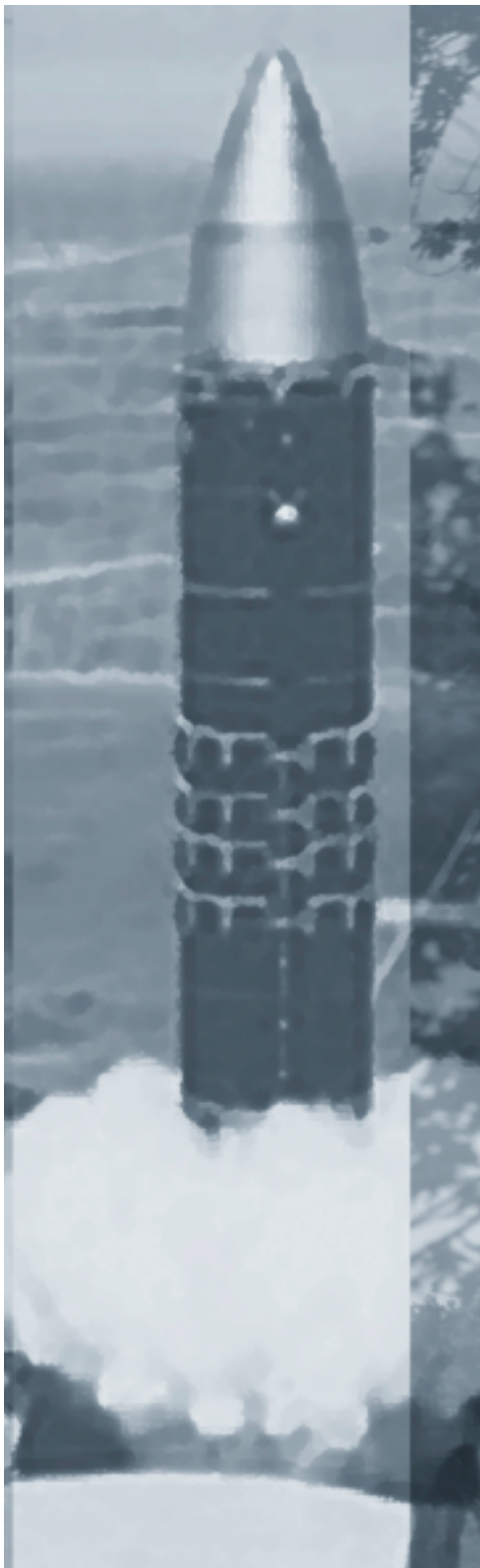
Jordan, and the Palestinian Authority, which will enable cooperative detection and management of an outbreak. The MECIDS food-borne disease system will improve public health for nations in the Middle East in addition to preparing them to manage a crisis.

Progress:

- ▶▶ MECIDS has created a tight network among senior officials in the region. In 2002, the relationships formed by MECIDS helped restart a dialogue between Palestinian and Israeli Health Ministry officials.
- ▶▶ MECIDS is becoming a model for using concrete projects to establish relationships among parties in conflict and strengthen cooperation to reduce regional and global threats.



NUCLEAR



The Nature **TERRORIST ACQUISITION AND USE OF NUCLEAR WEAPONS**

The hardest part of making a nuclear weapon is getting plutonium or highly enriched uranium (HEU), the essential ingredients of a nuclear bomb. Since these materials are difficult to make, the most likely way a terrorist will get them is through illicit purchase or theft. Acquiring these materials is the most difficult step for terrorists to take and the easiest step for us to stop. By contrast, every subsequent step in the process of developing a nuclear weapon is easier for terrorists to take and more difficult to stop.

In Russia alone, the Cold War legacy of the Soviet Union left vast quantities of weapons, HEU and plutonium, as well as tens of thousands of people with weapons or materials knowledge whose jobs were no longer assured. In more than 40 countries around the world, there are more than 100 research facilities with HEU, some of which is inadequately secured and vulnerable to theft.

Over the past decade, U.S. and Russian activities carried out under the Nunn-Lugar Cooperative Threat Reduction program and related programs have made significant progress in securing and eliminating vulnerable weapons and materials in Russia and the new independent states.

However, less than 50 percent of the nuclear materials and warheads in Russia have had basic cooperative security upgrades. At the 2002–2003 pace, it will take an additional 13 years to complete comprehensive security

upgrades for these materials. If it were made a priority, the work could be done in four years. And we have only just begun the task of securing and eliminating vulnerable materials from the more than 100 HEU research facilities around the globe. U.S. and Russian officials have pledged to increase the pace substantially both for vulnerable materials in Russia and around the world.

We must deny terrorists the materials they need to make a nuclear weapon. The pace of this important work must be accelerated and the scope expanded. While challenging, this work is finite and doable.

THE CONTINUING SPREAD OF NUCLEAR WEAPONS BY STATES

State nuclear weapons programs pose a growing danger. Iranian leaders have a declared policy of developing a domestic nuclear fuel cycle, and they have made considerable progress in developing uranium enrichment capabilities at their Natanz plant, which could be used to manufacture nuclear weapons materials. In November 2004, Iran and a group of member states from the European Union reached an agreement under which Iran would temporarily suspend all uranium enrichment activities in exchange for guarantees that these states would oppose referral of the Iran nuclear issue to the United Nations Security Council and encourage the resumption of talks with Iran on a new trade agreement.

Some experts are concerned that Iran

The
defense
against
nuclear

“Any use of nuclear weapons, by accident or design, risks human casualties and economic dislocation on a catastrophic scale. The proliferation of such weapons—and their potential use, by either State or non-State actors—must remain an urgent priority for collective security.”

2004 UN High Level Panel on Threats, Challenges and Change

may already be violating this agreement by continuing to enrich uranium clandestinely. Negotiations to discuss a long-term solution are the next step in this process, but it is unclear whether Iran and its EU negotiating partners will be able to reach an agreement on the permanent suspension of uranium enrichment.

The spread of nuclear technology and related know-how is also cause for increasing concern. The exposure of an illicit nuclear trading network centered in Pakistan revealed a stunning operation to bypass international controls on the dissemination of nuclear weapons technology. These transfers were made through multiple countries and individuals operating outside of global export control mechanisms and were undetected as cargoes entered ports and crossed borders. This network is believed to have transferred Pakistani nuclear technology to Libya, Iran and North Korea.

In the case of Libya, the transfers included sensitive nuclear weapons design information. Since that time, Libya has admitted to pursuing a covert nuclear weapons program and has committed to dismantling the program. In March 2004, the United States and IAEA removed 16 kilograms of HEU from Libya's Tajura Nuclear Research Center, and plans are in place to convert the HEU-fueled research reactor at the site to low enriched uranium.

In South Asia, the risk of nuclear use between Pakistan and India remains high. These two countries have a history of strained

relations, wars and cross-border terrorism. Both sides continue to expand their warhead stockpiles and delivery systems. At the same time not enough is being done by either side to reduce the risks of nuclear use through concrete risk reduction or arms reductions. It is encouraging, however, that both governments have begun a comprehensive dialogue that can help reduce nuclear tensions and are beginning to identify risk reduction measures for implementation, such as a “hotline” between the foreign secretaries of the two countries, and an agreement to notify each other prior to any missile launches.

North Korea has withdrawn from the Nuclear Non-Proliferation Treaty, lifted the freeze on its plutonium-based nuclear weapons program and expelled IAEA inspectors who had been monitoring the freeze under the Agreed Framework of October 1994. North Korea claims to have engineered a number of plutonium-based nuclear weapons and is believed to be enriching uranium for a parallel uranium-based nuclear weapons program. The six-party talks, which were set up to mitigate this diplomatic crisis, have yet to produce any meaningful progress toward a negotiated solution and have repeatedly stalled because of political tensions among participating nations.

In April 2004, Brazil refused to allow unrestricted IAEA inspections of its new gas centrifuge enrichment plant, which was under construction in Resende. The Brazilian government insists that the centrifuges are

intended solely for commercial purposes, and that access restrictions are necessary to protect proprietary information about indigenously developed centrifuge technology. However, the program raises concerns about a new type of arms race in which states develop civilian nuclear capabilities under IAEA safeguards, which can easily be converted later to a nuclear weapons program. The IAEA and the Brazilian government reached an agreement in October, which empowered inspectors to examine the Resende plant but did not provide unrestricted access.

UNITED STATES AND RUSSIA REMAIN IN COLD WAR NUCLEAR POSTURE

The risk of nuclear exchange between the United States and Russia did not disappear with the end of the Cold War, and in some ways it has become more dangerous. The United States and Russia continue to maintain thousands of nuclear warheads on land and sea-based missiles, ready to fire at a moment's notice—essentially the same as during the Cold War. Russia's degraded early warning systems coupled with the large nuclear rapid and accurate strike potential of the United States provide a continuing incentive for Russia to rely on a "launch-on-warning" capability that is inherently vulnerable to mistakes, accidents and miscalculations. These large missile forces pose a significant security risk to both nations of mistaken, accidental or unauthorized nuclear launch. U.S. and Russian nuclear force size and readiness levels fail to

reflect the fundamentally changed political relations between the two countries. Moreover, we believe that if the United States and Russia take steps to deemphasize their reliance on nuclear weapons, it would give both nations more standing to encourage other nations to dismiss the nuclear option.

Strategies for Nuclear Threat Reduction

Reducing the risk of nuclear use—from terrorists and nation-states—requires a broad set of complementary strategies targeted both at stemming the demand for nuclear weapons and at denying organizations or states access to the essential nuclear materials, technologies and know-how. Ultimately, success in reducing global nuclear threats can be achieved only through unprecedented cooperation among states. No state acting alone has sufficient authority, resources or influence to assuredly prevent a nuclear attack, especially from nuclear terrorism.

NTI is working in four strategic areas designed to address the most urgent, near-term risks, and to take advantage of opportunities where a private organization can leverage greater action from governments on a larger scale. These four areas of activity are:

- ▶▶ Securing, consolidating and reducing fissile material;
- ▶▶ Leveraging resources to address nuclear infrastructure and human capital;

“In the post-9/11 environment, to see countries enriching uranium and the number of countries enriching uranium expanding all the time is a matter of enormous concern.”

**Mohamed ElBaradei, Director General
International Atomic Energy Agency**

“We bear a special responsibility for the security of nuclear weapons and fissile material, in order to ensure that there is no possibility such weapons or materials would fall into terrorist hands... Building on our earlier work, we announce today our intention to expand and deepen cooperation on nuclear security with the goal of enhancing the security of nuclear facilities in our two countries and, together with our friends and allies, around the globe.”

**Joint Statement by
President George W. Bush and
President Vladimir V. Putin
February 24, 2005**

- ▶▶ Building global cooperation on security goals; and
- ▶▶ Generating new thinking on reducing nuclear risks.

SECURING, CONSOLIDATING AND REDUCING FISSILE MATERIAL

The relative ease of obtaining weapons designs and engineering non-nuclear components makes control over nuclear materials the first line of defense for preventing terrorist groups or hostile forces from developing or obtaining nuclear weapons. A global approach to removing and securing nuclear materials is essential because the chain of security is only as strong as its weakest link. NTI is working to advance this “Global Cleanout and Secure” agenda through a number of projects to secure fissile materials around the world.

Eliminating Civilian Use of Highly Enriched Uranium

NTI’s actions to support the removal of vulnerable highly enriched uranium have increased awareness about the threats posed by these materials and have renewed interest in addressing these threats. NTI is helping nations move away from routine use of the raw material of nuclear terrorism through a range of projects including the removal of two-and-a-half bombs’ worth of weapons-usable HEU from a research reactor near Belgrade; the creation of a comprehensive U.S.-Russia-IAEA plan to remove HEU from

Soviet-origin research reactors worldwide; and the permanent elimination of HEU stocks in Kazakhstan. These types of projects helped spur the creation of the U.S. Global Threat Reduction Initiative, announced in May 2004. This initiative is also working to repatriate U.S.-origin HEU from around the globe.

NTI is filling a critical gap in current efforts to reduce civilian HEU use through a new project on **Low Enriched Uranium Fuel Development for Russian Naval Reactors**. In partnership with Russia’s Bochvar Institute and the Nizhny-Novgorod Machinery Construction Plant, NTI is supporting the development of low enriched uranium cores for Russia’s fleet of nuclear-powered ice-breakers. The reactors that power these ships currently use HEU. Moreover, they form the basis for a proposed new fleet of floating nuclear power plants, which would be used to provide energy in remote locations, and which Russia plans to export to many nations.

Converting existing icebreakers to use LEU fuel, and incorporating LEU-based reactor designs into floating power plants, would significantly reduce future requirements for the manufacture, handling and long-distance shipping of HEU fuel. This design project may also support the conversion of certain more challenging types of HEU-powered research reactors.

Disposing of Russian Highly Enriched Uranium

NTI is working to accelerate the elimination of dangerous stocks of excess Russian highly

enriched uranium to a pace commensurate with today's threats. In support of this goal, NTI commissioned a joint U.S.-Russian study of options for **Accelerating Highly Enriched Uranium Blend-Down in Russia**. The study analyzes 12 options for accelerating the elimination of HEU no longer required for military purposes, evaluating a range of relevant technical and economic issues. The results of this study will be released in 2005 and are intended to catalyze official negotiations between the United States and Russia to step up their efforts to blend down stocks of excess HEU.

This project builds on the success of the 1992 U.S.-Russian HEU Purchase Agreement, which is transforming 500 metric tons of Russian HEU from dismantled weapons into LEU fuel for U.S. nuclear power reactors. The United States and Russia will continue to dismantle additional nuclear weapons, in response to the 2002 Strategic Offensive Reduction Treaty and the ongoing downsizing of Russia's nuclear weapons infrastructure. This will create large additional stocks of excess HEU. NTI's study will lay the groundwork that could help governments ensure that these materials are rapidly converted to LEU, which cannot be used to make a nuclear weapon.

LEVERAGING RESOURCES TO ADDRESS NUCLEAR INFRASTRUCTURE AND HUMAN CAPITAL

As Russia seeks to cut its nuclear weapons

workforce in half over the next few years, it must close or convert facilities at ten nuclear sites and eliminate 35,000 jobs. Many of the people who hold those jobs have access to nuclear weapons material or information useful to terrorists seeking nuclear capabilities. A transition to sustainable civilian employment is critical to avoiding dangerous temptations to sell access or information before jobs are lost. Reducing the total population of workers—at all levels—with access to sensitive materials or facilities will require a diversity of techniques beyond those currently in use. Small business creation, joint ventures with Russian high-technology firms and worker transition programs offer new opportunities to mid- and lower-level facility personnel, often neglected by existing redirection efforts but potentially valuable to unauthorized insiders or outsiders seeking to acquire weapons or materials.

Working closely with governments and others involved in this complex pursuit, NTI has identified pilot projects in Russian closed nuclear cities that can be replicated elsewhere, specifically in the nuclear cities of Sarov and Snezhinsk. NTI's \$1 million investment in the **Fund for Development of Conversion Companies** has supported new and growing businesses in Sarov, home to a closing nuclear weapons manufacturing plant and a shrinking nuclear weapons design institute. This project has already created new jobs for former nuclear employees, and one-third of the funds have been repaid, freeing



The Importance of Presidential Leadership

In February 2005, Russian President Vladimir Putin and U.S. President George W. Bush met in Bratislava, Slovakia and showed they are beginning to take personal charge and responsibility for progress on this urgent work, pledging enhanced cooperation to:

- ▶ strengthen security upgrades of nuclear facilities;
- ▶ return highly enriched uranium from U.S. and Russian designed research reactors and convert the reactors to low-enriched uranium fuels;
- ▶ share best practices to improve security at nuclear facilities around the world; and
- ▶ enhance emergency response capabilities to deal with a nuclear or radiological incident.

For these commitments to turn into results, there must be continued direct engagement by both presidents, an increased measure of reciprocal transparency on both the U.S. and Russian side and an enhanced effort to foster a true partnership.



Cylinders containing warhead-derived nuclear fuel from Russia are unloaded in the United States. Since 1993, the United States and Russia have worked cooperatively to recycle bomb-grade uranium from dismantled Russian nuclear warheads into fuel used by American power plants to produce electricity. The bomb-grade uranium material is diluted in Russia until it becomes suitable for use as fuel in commercial nuclear power reactors. As of 2004, more than 9,000 warheads have been eliminated. Today 50 percent of U.S. nuclear power plant fuel comes from former Soviet weapons—enough to power one in 10 light bulbs.



The formerly secret Russian nuclear city of Snezhinsk has a population of 48,300.

them up for reinvestment in new businesses. NTI is also **Building Capacity of SarovLabs** by providing funds to improve their marketing and program management capabilities. SarovLabs is a contract-research organization that employs former weapons scientists and seeks to engage in contracts from clients in the West and Russia. Through these types of projects, NTI is strengthening nuclear security by reemploying personnel with knowledge of sophisticated weapons design and materials handling practices.

BUILDING GLOBAL COOPERATION ON SECURITY GOALS

Current physical security arrangements at many nuclear facilities around the world are inadequate to address the international community's most pressing security threat—terrorists seeking to acquire plutonium or highly enriched uranium for a crude nuclear weapon. The Physical Protection Convention, which requires IAEA member states to secure nuclear materials during international transport, is designed to address this threat, and a currently proposed amendment seeks to strengthen it and broaden its scope. However, even with the adoption of this amendment, security gaps will remain.

In the absence of comprehensive, binding global standards for the protection of nuclear materials, an effective near-term strategy for improving security would be for nuclear facility operators to adopt voluntary global security and accounting best practices.

To begin a process for defining these practices, NTI hosted a series of workshops in 2004 through its project on **Global Best Practices for Nuclear Materials Management**. Hosted in partnership with the Institute of Nuclear Materials Management, the workshops provided an open forum for information exchange among 90 nuclear materials professionals from 36 countries. The workshops offered a unique opportunity for operational experts from government, industry and research venues to meet with colleagues from other nations for discussions at a rich level of technical detail.

Drawing on the workshops, NTI is working with the Institute to create a document that could form the basis for voluntary global best practices. NTI plans to host a second set of Global Best Practices Workshops in fall 2005, to advance this work. Ultimately, the collection, documentation and sharing of global best practices could help form the basis for raising nuclear materials management standards to better meet the modern threats from terrorists and others seeking weapons of mass destruction.

GENERATING NEW THINKING ON REDUCING NUCLEAR RISKS

Nearly 15 years after the end of the Cold War, the United States and Russia continue to maintain thousands of nuclear weapons on hair-trigger alert. These weapons pose a significant security risk to both nations of mistaken, accidental or unauthorized nuclear

launch. To advance the global effort to reduce the risk of nuclear use, the United States and Russia—the two nations with the largest nuclear stockpiles—must lead in deemphasizing the role of nuclear weapons. That's why NTI is a strong advocate for change in U.S. and Russian nuclear policies.

In June 2004, NTI Co-Chairman Sam Nunn delivered a speech to the Carnegie International Non-Proliferation Conference calling on the Presidents of the United States and Russia to reduce each country's reliance on nuclear weapons and end their nation's Cold War nuclear force postures by removing all nuclear weapons from hair-trigger alert. If both the United States and Russia can take this step, they can dramatically reduce the chance of an accidental, mistaken or unauthorized launch and deemphasize the role of nuclear weapons in their political and military relations.

In December 2004, Nunn proposed that the President of the United States and Russia make a joint commitment to:

- » Engage in a process with the goal of removing all U.S. and Russian nuclear weapons from a quick launch posture capable of launch within minutes.
- » Reduce the number of warheads on hair-trigger alert from several thousand to several hundred, as an intermediate step.
- » Initiate a dialogue with other nuclear weapon states to de-emphasize globally the importance of nuclear weapons by developing a standard against maintaining

weapons on quick launch status.

Bold and determined presidential leadership—in the United States and Russia—is essential to bringing about any significant changes in nuclear policies and force structures.

In addition to public advocacy, NTI is exploring options for removing weapons from hair-trigger alert through two studies commissioned from Russian experts, including a prominent Russian academic and three retired Russian generals with experience developing Russia's nuclear strategy and maintaining its strategic nuclear forces. NTI is also developing similar proposals with U.S. experts.

Reducing the quick launch nuclear posture of both the United States and Russia would be a major step forward in reducing nuclear threats and set an example for other nuclear powers.

Nuclear Security Culture: The Human Factor

As Russian nuclear facilities cut back on staff, the work habits and skills of those who continue to steward Russia's enormous nuclear weapons and materials stockpile are critical to maintaining security in the face of today's threats. A decade of U.S.-Russian cooperation to upgrade security equipment at nuclear facilities in Russia reveals that hardware is only as good as the people who operate it, and that a weak security culture in Russia limits the effectiveness of purely equipment-based assistance.

With support from NTI and others, the University of Georgia's Center for International Trade and Security produced a detailed analysis of Russian approaches to nuclear security, with a focus on "the human factor"—the attitudes and habits of the personnel charged with maintaining security at nuclear facilities. This report, published in English and Russian, offers both a critique of Russia's attention to the human factor and recommendations for improvement. These lessons are applicable not only in Russia, but also globally, because weak security cultures exist in many nations.

NTI Projects Approved or Ongoing in Fiscal Year 2004

SECURING, CONSOLIDATING AND REDUCING FISSILE MATERIAL

Strengthening IAEA Programs to Secure Vulnerable Nuclear Material

To support the expansion of IAEA programs to secure vulnerable nuclear materials worldwide and to support the IAEA's ability to leverage additional financial contributions for this program.

International Atomic Energy Agency

Vienna, Austria

\$1,150,000

2002–2005

Removing Highly Enriched Uranium from Serbia

To contribute to the removal of poorly secured highly enriched uranium 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

2002–2005

Accelerating Highly Enriched Uranium Blend-Down in Russia

To analyze options for accelerating the rate at which highly enriched uranium is transformed into safe forms for ultimate use in civilian power plants beyond the current rate of 30 metric tons per year to up to 60 metric tons per year.

Facilities and Institutes of Russian Ministry of Atomic Energy

Moscow, Russia

Up to \$2,000,000

2002–2005

Consolidating and Blending Down Highly Enriched Uranium in Kazakhstan

To contribute to the security, consolidation and blend-down of all remaining highly enriched uranium in Kazakhstan, located at nuclear power and research reactors, so that it cannot be stolen or diverted for use in nuclear weapons.

Institute of Nonproliferation, Almaty, Kazakhstan;

Ulba Metallurgical Plant, Ust-Kamenogorsk, Kazakhstan

Up to \$2,000,000

2002–2005

Russian Research Reactors Scoping Study

To initiate planning for the removal of highly enriched uranium fuel from research facilities in Russia to more secure locations in the country.

Central Research Institute of Management, Economics and Information

Moscow, Russia

\$60,000

2004–2005

Planning to Secure and Remove Highly Enriched Uranium from Soviet-Supplied Research Reactors

To evaluate security, safety, regulatory, transportation and cost issues associated with removing fresh and spent highly enriched uranium 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

\$260,000

2002–2004

Low Enriched Uranium Fuel Development for Russian Naval Reactors

To develop low enriched uranium fuel for Russian civilian icebreakers and future floating nuclear power plants to replace highly enriched uranium fuel at risk of theft and diversion. This project will provide the basis for a decision to convert HEU-powered icebreakers and to design floating power plants to use non-weapons-usable fuels.

Bochvar All-Russia Research Institute of Inorganic Material

Moscow, Russia

\$500,000

Approved 2004

LEVERAGING RESOURCES TO ADDRESS NUCLEAR INFRASTRUCTURE AND HUMAN CAPITAL

Development of Conversion Companies

To contribute \$1 million to an existing Russian revolving loan fund, known as the Fund for Development of Conversion Companies, 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

\$1,000,000

2002–2006

Promoting Sarov Konversia Fund

To assist the Fund for Development of Conversion Companies expand its capabilities by developing a strategy and mechanism for attracting new donors and investors.

Fund for Development of Conversion Companies

Sarov, Russia

\$50,000

Approved 2004

Building Capacity at SarovLabs

To assist SarovLabs in becoming a self-sustaining, commercial contract research organization that employs former weapons scientists by contributing to the cost of project management and marketing support.

SarovLabs, Sarov, Russia

\$450,000

Approved 2003

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: downsize the nuclear weapons facility and staff and secure the remaining nuclear materials at the site.

The Eisenhower Institute

Washington, DC, USA

\$230,400

2003–2005

BUILDING GLOBAL COOPERATION ON SECURITY GOALS

Strengthening the Global Partnership

To develop a constituency among and beyond the Group of Eight (G8) leading industrial nations for threat reduction programs with Russia, focusing on their respective national security communities, 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, agreed to in June 2002, along with pledges totaling \$20 billion to support nonproliferation projects, initially in Russia, over the next decade.

Center for Strategic and International Studies
Washington, DC, USA

\$3,208,508

2001-2004

\$477,728 for 2005

Global Best Practices for Nuclear Materials Management

To sponsor a series of workshops that bring together select groups of nuclear materials professionals from government, industry and research venues around the world to share best practices for securing and accounting for nuclear weapons materials.

NTI

In cooperation with the Institute of Nuclear Materials Management

Northbrook, IL, USA

Up to \$500,000

2003–2004

Up to \$500,000 for 2005

Reducing Nuclear Dangers in South Asia

To sponsor international workshops with experts from India, Pakistan and the United States to examine pathways to nuclear escalation in South Asia and to develop measures to prevent those scenarios from occurring. The project will develop risk reduction measures that will be shared with leaders in India and Pakistan for their consideration for implementation.

The Henry L. Stimson Center

Washington, DC, USA

\$501,674

2002–2004

India, Pakistan and the Global Nonproliferation System

To convene a series of workshops in India and Pakistan that explore how the United States, India and Pakistan might strengthen their adherence to global nonproliferation norms and practices, and build an international consensus around a new understanding of India and Pakistan's relationship to the international nonproliferation system.

The Henry L. Stimson Center

Washington, DC, USA

\$325,000

2004–2005

Establishing Nuclear Risk Reduction Centers in South Asia

To establish a non-governmental task force of Indians, Pakistanis and U.S. experts to develop candidate models for the operation of nuclear risk reduction centers in South Asia with the final report provided to the governments of India and Pakistan.

Center for Strategic and International Studies

Washington, DC, USA

\$210,000

2003–2004

Capacity-Building for Future Leaders in India, Pakistan and China

To hold a two-week workshop in Nathiagali, Pakistan, for young Chinese, Indian and Pakistani journalists, academics and government officials that will focus on nuclear, biological and chemical weapons threats and cooperative strategies for reducing them.

Regional Center for Strategic Studies

Colombo, Sri Lanka

Up to \$165,000

2004

Cooperation on Counterterrorism

To initiate and expand a joint initiative between the U.S. National Academy of Sciences and the Russian Academy of Sciences with special focus on new efforts to collaborate on science and technology solutions for sustaining nuclear materials security cooperation, removing obstacles to U.S.-Russian threat reduction programs.

Russian Academy of Sciences

Moscow, Russia;

National Academy of Sciences

Washington, DC, USA

Up to \$800,000

2002–2004

U.S.-Russian Nonproliferation Working Group

To establish U.S.-Russian working relationships, to reinvigorate the U.S.-Russian consensus on nonproliferation objectives and approaches, and to create and identify shared interests and cooperative strategies for preventing the spread of weapons of mass destruction.

Belfer Center for Science and International Affairs

*John F. Kennedy School of Government
Harvard University*

Cambridge, MA, USA

\$497,500

2002–2004

\$150,000 for 2005

U.S.-Russian Dialogue on Strategic Issues

To develop practical, timely policy proposals for consideration by U.S. and Russian governments through a series of dialogues that brings officials from both countries together in neutral, informal settings to examine new and evolving issues related to arms control and nonproliferation.

*Carnegie Endowment for International Peace
Washington, DC, USA*

\$492,424

2002–2004

Modeling Russia's Power Development Plan

To develop models of national and multinational nuclear fuel cycle concepts, with an emphasis on nonproliferation, economics and future excess weapons materials disposition.

Kurchatov Institute

Moscow, Russia

\$49,755

2003–2005

Report on the Human Factor and Security Culture

To update, translate, publish and distribute the University of Georgia's preliminary report on "The Human Factor and Security Culture: Challenges to Safeguarding Fissile Material in Russia."

*Center for International Trade and Security
University of Georgia*

Athens, GA, USA

\$31,000

2003–2004

Overcoming Impediments to Cooperation

To develop and promote practical means of overcoming obstacles to U.S.-Russian cooperation on reducing threats from nuclear, biological and chemical weapons.

Russian Academy of Sciences

Moscow, Russia;

National Academy of Science

Washington, DC, USA

\$200,000

2004–2005

Global Partnership and Submarine Dismantlement

To examine the efficacy of existing coordination efforts among programs to eliminate proliferation and environmental risks associated with decaying Russian submarines and to make recommendations for improving coordination.

Monterey Institute of International Studies

Center for Nonproliferation Studies

Monterey, CA, USA

\$20,000

2004

Security Council Resolution 1540 – Defining Implications and Advancing Implementation

To convene a symposium that will analyze and discuss processes for implementation of UN Security Council Resolution 1540. This resolution, adopted in April 2004, calls upon states to establish domestic controls to prevent the proliferation of nuclear, biological and chemical weapons and their means of delivery. The symposium will involve the UN Secretariat and senior diplomatic representatives of many nations, particularly those serving on the Security Council.

McGeorge School of Law

University of the Pacific

Sacramento, CA, USA

\$50,000

2004–2005

“Nuclear Asia” Conference

To foster discussion and the development of new ideas to address Asian nuclear security concerns facing the international community. The “Nuclear Asia” Conference took place in March 2004 and brought together academic, government and non-government experts focusing on Asian security and foreign policy issues.

National Bureau of Asian Research
Seattle, WA, USA
\$10,000
2004

Combating Criminal Use of Weapons of Mass Destruction

To support the activities of the United Nations Interregional Crime and Justice Research Institute in the field of terrorism prevention, with particular attention to the illicit trafficking and criminal use of nuclear, biological, chemical and radiological materials and weapons.

United Nations Interregional Crime and Justice Research Institute
Turin, Italy
\$50,000
2004–2005

A Strategy for Nuclear Security

To create and promote a new, international nuclear nonproliferation strategy. NTI funds facilitated a global discussion and critique of the draft strategy, the presentation of an internationally-vetted document to the U.S. Government, and the promotion of the strategy in the runup to the Nuclear Nonproliferation Treaty Review Conference in the spring of 2005.

Carnegie Endowment for International Peace
Washington, DC, USA
\$200,000
2004–2005

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 policy-makers and by facilitating meetings between nuclear experts in India and other nations.

The Delhi Policy Group
New Delhi, India
\$230,000
2003–2006

Allies Conference

To develop coordinated approaches for bringing India and Pakistan into the practice of global nonproliferation norms, through an Allies Conference that brings together experts on South Asia and government officials from several nations.

The Brookings Institute
Washington, DC, USA
\$35,000
2004–2005

Developing Tools to Prevent the Accidental Launch of Nuclear Weapons

To study organizational and technical measures that could be adopted by Russia and the United States to reduce the risk of accidental or unauthorized use of nuclear weapons. The study will examine means to prevent erroneous launch of nuclear weapons initiated by early warning systems and to increase the decision-making time taken by the country's leadership.

Center for Strategic Nuclear Forces Problems
Moscow, Russia
\$32,258
2004

Deemphasizing the Role of Nuclear Weapons

To produce a report with practical proposals for removing U.S. and Russian nuclear weapons from high alert and a follow-on report that explores options for the creation of a new multilateral arms control regime.

School for International Security and World Politics at the Institute of U.S.A. and Canada Studies in Moscow

Moscow, Russia

\$71,728

2004

Managing Threat Reduction Programs

To examine the concept of creating a senior White House position for weapons of mass destruction threat reduction to improve strategic, budgetary and programmatic coordination across different government agencies.

*Center for Strategic and International Studies
Washington, DC, USA*

\$19,953

2004–2005

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

Approved 2004

Public-Private Partnership in Support of Global Cleanout

To develop a concept paper on public-private partnerships in support of global cleanout of fissile materials, examining the possibility of integrating the capabilities of federal agencies, non-government organizations and the private sector with financial assets that can be generated from future down-blending and commercial sale of surplus highly enriched uranium.

Haselwood Enterprises, Inc.

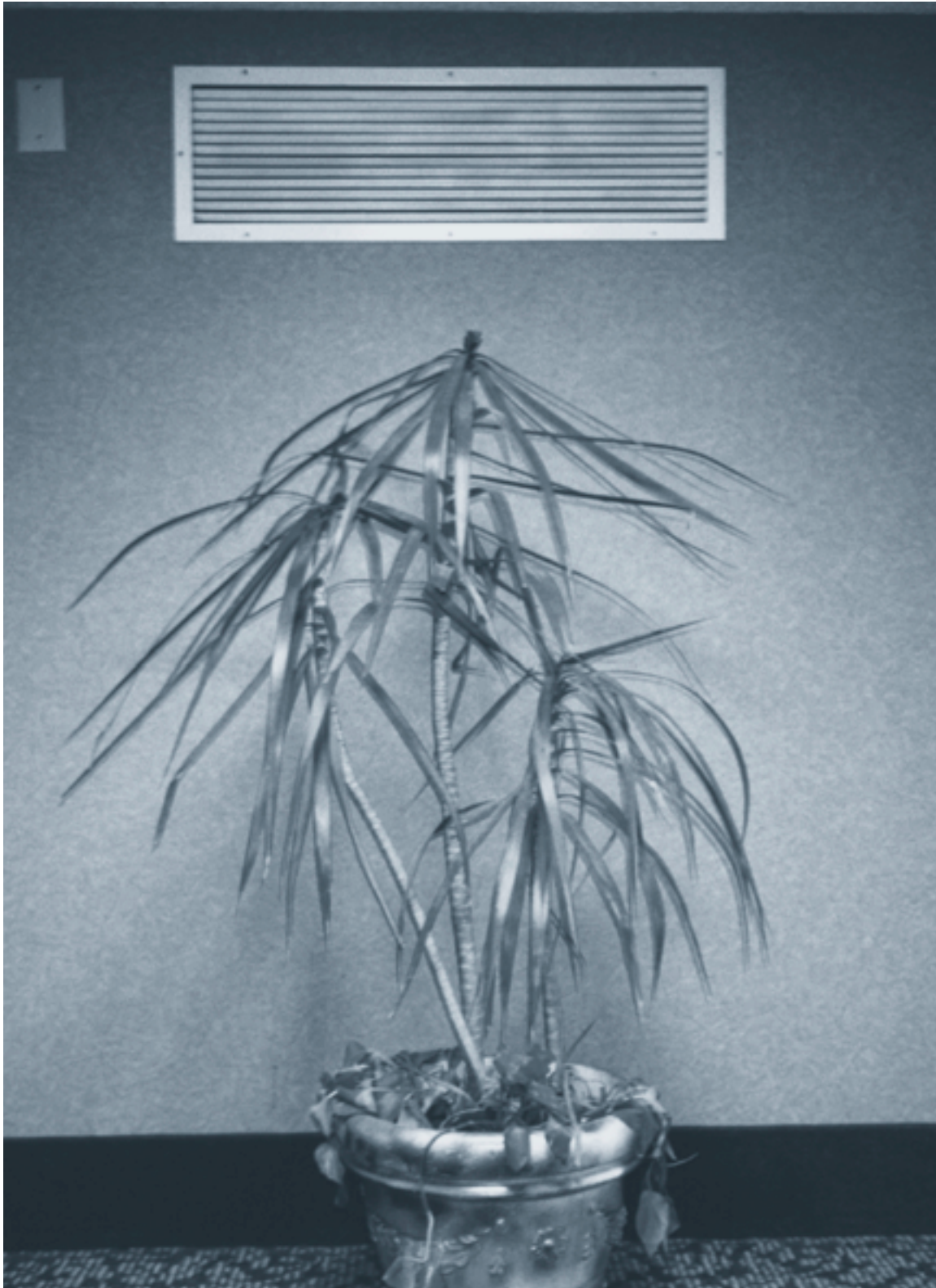
Oak Ridge, TN, USA;

Edlow International Company,

Washington, DC, USA

\$50,000

2004



BIOLOGICAL



The Nature of the Threat

The potential destructive power of biological weapons is enormous, yet the opportunity for access to dangerous pathogens can be fairly routine and inexpensive. Moreover, the knowledge and expertise to obtain or prepare bioweapons are increasingly available, and the potential for exploitation is embedded in the very scientific and technological advances that hold promise for improving health and preventing disease.

An attack with a bioweapon could produce an infectious disease epidemic that would sicken and kill large numbers and persist over a prolonged period as contagion spreads. Unlike

“Of all the various weapons of mass destruction, biological weapons are of the greatest concern to me...the one that scares me to death.”

**General Colin Powell, Chairman, Joint Chiefs of Staff,
Before the House Armed Services Committee
March 30, 1993**

other types of attack, there would likely be no recognizable event or immediate casualties, and no physical location where damage is concentrated. In the absence of an announcement or a fortuitous discovery, authorities may remain unaware that a biological attack has happened until days or weeks have passed and victims

begin to appear in physicians' offices and hospital emergency rooms.

Biological weapons are relatively easy to produce and inexpensive. They can inflict significant damage in small quantities and in the absence of sophisticated delivery mechanisms. Pathogens suitable for bioweapons can be easily concealed and transported, and many are found in nature, as well as in government, university and industry laboratories. Information about how to obtain and prepare bioweapons is increasingly available on the Internet and in open scientific literature. Moreover, bioweapons activities can be easily hidden within legitimate research laboratories or pharmaceutical sites.

The idea of a “dual-use dilemma” has emerged because the same technologies and materials that are used for research to benefit society can also be used by terrorists to make biological weapons.

The biological threat challenges traditional ways of thinking about prevention, deterrence and response, requiring us to develop new tools for threat reduction. Compared with the nuclear and chemical threats, the strategic and analytic framework for addressing biological threats and the depth of expertise are much less developed. The response to the biological threat—with its close links to naturally occurring infectious disease—requires a new thinking.

“It is in developing countries...that new diseases and outbreaks occur most often. It is there, too, that the laboratory and surveillance capacity to detect and contain these diseases is sometimes lacking...people face biological terror on a permanent basis in the form of diseases such as cholera, dengue, measles, meningitis, shigellosis, and yellow fever.”

Ministry of Health, Health Status in the Palestinian Authority, 2002



Macabee private laboratory in Tel Aviv, Israel. NTI is exploring options to include this lab in a Middle East infectious disease regional surveillance network.

Strategies for Threat Reduction

NTI is working to address the complex, multifaceted biological threat in general and the bioweapons threat in particular. These threats can emerge from many sources and involve human, plant and animal diseases. An effective response requires:

- ▶ **Strengthening biosecurity and encouraging standards for responsible research**—engaging the scientific community to improve security and safe handling of dangerous pathogens and materials, developing normative standards for research and transparency, preventing the development and proliferation of biological agents as weapons and participating in the creation of plans and safeguards to forestall their use.
- ▶ **Scientific cooperation and collaboration with the former Soviet Union**—redirecting the scientific skills and knowledge of former Soviet bioweaponers, enhancing trust and transparency and producing beneficial pro-social scientific work in important public health areas of mutual concern.
- ▶ **Global disease surveillance, early detection and rapid response**—enabling rapid detection, investigation and early response to potential threats by strengthening worldwide surveillance capability and improving the sensitivity and connectivity of these efforts.
- ▶ **Building new partnerships**—bringing the communities of public health, medicine,

agriculture, science, intelligence and law enforcement together in closer working relationships and improving data gathering, analysis and preparedness for current and future threats.

- ▶ **Bioterrorism preparedness and consequence management**—addressing this urgent need with a multifaceted approach, engaging many disciplines, agencies and levels of government, and the private sector, nationally and internationally.

Global Health and Security Initiative

In 2004, the NTI Biological Program directed resources toward two main goals: **Promoting Science Security** and **Strengthening Global Disease Surveillance, Early Detection and Rapid Response**.

NTI is working toward these goals under the umbrella of its **Global Health and Security Initiative**.

PROMOTING SCIENCE SECURITY

Preventing the diversion of biological research for malevolent applications will require tighter security on dual-use materials and know-how. NTI is working to engage the biomedical research community to develop ideas for constraining the malevolent application of biological research without unduly encumbering the pursuit of science for scholarly or beneficent ends. NTI has shaped

and supported a number of innovative projects that offer new insights into handling this dual-use dilemma.

STRENGTHENING GLOBAL DISEASE SURVEILLANCE, EARLY DETECTION AND RAPID RESPONSE

Effective global disease surveillance, early detection and response capabilities are the fundamental building blocks of preparedness against infectious disease threats—whether naturally occurring or resulting from bioterrorism.

Surveillance and early detection involve gathering data and monitoring changes in disease incidents. Outbreak response involves acting upon this information by treating illness to prevent the further spread of disease.

Working with public health institutions, often in public-private partnerships, NTI is supporting international efforts to strengthen the global infrastructure for the detection and control of infectious diseases, especially through improved disease surveillance worldwide.

NTI's **India Field Epidemiology Training Program** is enabling local public health scientists to identify, investigate and control infectious disease threats and to serve as a resource for broader regional surveillance efforts. This program was one of the first organizations to respond to the 2004 tsunami disaster in Tamil Nadu. Program participants helped the State Health Department and Government of India set up post-disaster surveillance and provided daily reports.

Promoting Greater Security in Science

NTI partnered with the Sloan Foundation to support the National Academy of Sciences' groundbreaking report, "**Biotechnology Research in an Age of Terrorism: Confronting the Dual-Use Dilemma.**" This report has received widespread attention and led to a decision by the U.S. Department of Health and Human Services to lead a government-wide effort to improve biosecurity for legitimate classes of biological research that could be misused. This new initiative includes the creation of the National Science Advisory Board for Biosecurity, which will provide advice to the U.S. government on ways to minimize the possibility that knowledge and technologies from federally funded biological research will be misused to threaten public health or national security.

NTI is also supporting several projects to foster an international discussion on strategies to guard against the destructive application of biological research and development while still supporting the open and constructive pursuit of valuable science.

Through its **Bioscience Community Self-Governance** project, NTI is supporting work by the Center for Biosecurity of the University of Pittsburgh Medical Center to host an International Conference on Biosafety and Biorisks. Scheduled to take place in Lyon, France, in 2005, this meeting will engage scientists, health leaders and practitioners in discussions about biosafety and biosecurity challenges presented by SARS, influenza and other major epidemic threats, as well as ways to improve international cooperation in preventing and responding to future epidemics.

The project, **Establishment of a Bioindustry Standards Organization**, engages biotechnology industry leaders in the development of normative standards to reduce potential proliferation of dangerous pathogens, techniques and know-how. With support from NTI, the Chemical and Biological Arms Control Institute and the International Institute of Strategic Studies-US convened three international meetings in 2004—in Singapore, the United Kingdom and the United States—bringing together participants from government, industry, academia, and other organizations to discuss ways to safeguard the legitimate use of life sciences by managing the risks of potential misuse—both deliberate and accidental. The project will culminate in the creation of the International Council for the Life Sciences, a charter-based organization that will commit its private and public sector members to a code of conduct to prevent the misuse of biological research.

NTI is also supporting the creation of an **International Forum on Biosecurity** to engage scientists and policymakers around the world to address concerns that research in the biological sciences might be misused by terrorists. Organized by the U.S. National Academy of Sciences, this forum is scheduled to take place in 2005 in Como, Italy.

Middle East Consortium on Infectious Disease Surveillance

As a pilot project for developing disease surveillance networks and fostering greater cooperation among countries in politically unstable regions, NTI has developed the **Middle East Consortium on Infectious Disease Surveillance (MECIDS)**.

The goal of MECIDS is to improve the ability of nations in the Middle East to detect and respond to disease outbreaks and bioterrorism. MECIDS brings together public health experts and Ministry of Health officials from Israel, Jordan, Egypt and the Palestinian Authority, with advisors from the World Health Organization, the Sandia National Laboratories and other American and European organizations. NTI committed nearly \$1.5 million to set up the Consortium and is now seeking partners to contribute the \$7 to \$8 million needed to purchase the equipment, supplies and provide initial training.

Many of the steps necessary to reducing the threat of bioterrorism can also help prevent and mitigate infectious disease outbreaks, which take the lives of millions of people each year. Because infectious diseases do not stop at international borders, the response to this biological threat must be global.

In the absence of a comprehensive global infectious disease surveillance system, an interim solution is the promotion of regional collaborations and surveillance networks. Perhaps nowhere is this a greater challenge than in the Middle East. NTI has partnered with Search for Common Ground to build the MECIDS network to foster cross-border cooperation and threat reduction. MECIDS members have identified food-borne and water-borne diseases as a priority concern and, as their first project, have agreed to establish a surveillance system for food-borne and water-borne disease outbreaks. This system will enable routine disease surveillance for nations in the Middle East in addition to preparing them to manage a crisis.

In developing this disease surveillance network, MECIDS has identified project leaders in the Ministry of Health as well as a network of laboratories in each of the three participating nations and the Palestinian Authority. MECIDS members have also established protocols for specimen collection and diagnosis of diarrheal illnesses to assess food-borne disease in the region and to create a mechanism for identifying potential infectious disease outbreaks due to common food products.

To facilitate rapid information processing and sharing, MECIDS is developing a laboratory-based data network that will be vital for local monitoring of infectious diseases and communication about suspected outbreaks. This data network will feed into a regional network to identify regional outbreaks and to alert collaborating neighbor states.

MECIDS is becoming a model for using concrete projects to establish relationships among parties in conflict and to strengthen cooperation to reduce regional and global threats.

They are also planning to conduct a survey for post-tsunami stress and mental health disorders with ensuing recommendations applicable to all disaster-hit areas in India.

Through a number of projects, NTI is strengthening the World Health Organization's (WHO) capabilities to improve preparedness and response to deliberate attacks on human health with biological and chemical agents.

Through its project on **Strengthening National Health Preparedness**, NTI is supporting the work of the WHO Center for Communicable Diseases to assess national preparedness for biological and chemical attacks. WHO will use these resources to establish and test a set of international guidelines for preparedness, compare them against existing public health capabilities that states have in place and make recommendations for improving those capabilities.

In 2002, NTI worked with the WHO to create the **NTI-WHO Global Emergency Outbreak Response Fund**. The Fund enables WHO to send teams of epidemiologists to investigate and respond to disease outbreaks within 24 hours, wherever they occur around the globe. The fund has been continually replenished with donations from governments and private philanthropies, and has supported rapid response to the SARS disease outbreak in Vietnam and China and to the Ebola outbreak in the Republic of Congo.

NTI, in partnership with the government of Canada, has increased WHO's capacity to



[CLOCKWISE FROM TOP LEFT] Lab testing as part of infectious disease surveillance in India.

A laboratory worker in Novosibirsk, Russia.

Microbiologists in the central public health laboratory of Israel.



“With early warnings of such significant events as disease outbreaks, public health and other government authorities worldwide are better able to undertake the measures necessary to protect the health and safety of their populations...GPHIN has been an invaluable tool with immeasurable benefits for the global public health community and we look forward to utilizing the enhanced system.”

Guenael Rodier

Director, Communicable Diseases Surveillance and Response Program, WHO

detect and respond to biological emergencies through the **Global Public Health and Intelligence Network II (GPHIN II)**, a web-based “early warning system,” which gathers and disseminates preliminary reports of global public health threats in all of the United Nations languages.

Designed by Health Canada, the original GPHIN is an English-language infectious disease outbreak database accessible to local and national public health officials worldwide.

With NTI and the Canadian government’s

support, GPHIN has been upgraded to GPHIN II, which will provide early warning information in six languages, allowing additional information to be screened, shared and acted upon more rapidly. The expansion of this “early warning” surveillance tool allows the system to provide vital information in Arabic, English, French, Russian, Simplified and Traditional Chinese and Spanish.

GPHIN has been in use since 1998 and currently identifies the first hints of nearly 40 percent of the outbreaks subsequently verified

by the WHO. Because local news stories often provide the first indication of a public health threat, GPHIN monitors global media sources and global health and science websites for early word of events such as disease outbreaks, contaminated food and water, bioterrorism and exposure to chemical and radio-nuclear agents and natural disasters.

NTI Projects Approved or Ongoing in Fiscal Year 2004

PROMOTING SCIENCE & SECURITY

Biotechnology Nonproliferation

To review, examine and make recommendations concerning biotechnology oversight practices and institutional arrangements for the research community to guard against the destructive application of biotechnology.

U.S. National Academy of Sciences

(in conjunction with the Sloan Foundation)

Washington, DC, USA

\$445,970

2002–2004

Establishment of a Bioindustry Standards Organization

To engage biotechnology industry leaders in the development of normative standards to reduce potential proliferation of dangerous pathogens, techniques knowledge and the establishment of a new bioindustry organization for monitoring these standards.

International Institute for Strategic Studies-U.S., Washington, DC, USA

Chemical and Biological Arms Control Institute, Washington, DC, USA

\$650,291

2001–2002

\$990,000

2003–2004

Bioscience Community Self-Governance

To explore strategies to constrain intentionally malevolent applications of biological research and development without unduly encumbering the pursuit of science for scholarly or beneficent ends.

Center for Biosecurity of the University of

Pittsburgh Medical Center

Baltimore, MD, USA

\$1,750,000

2002–2005

An International Forum on Biosecurity

To create an International Forum on Biosecurity to engage scientists and policymakers around the world to address the risks that research in the biological sciences might be misused by terrorists.

National Academy of Sciences

Washington, DC, USA

\$216,460

2004–2005

AAAS-NTI Fellowship in Global Security

To strengthen scientific expertise in policymaking and encourage scientists to pursue careers in the policy arena, this program supports 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

2001–2007

Biological Weapons Monitoring and Inspection Strategy Development

To facilitate the input of specialists from the U.S. pharmaceutical and biotechnology industries to the development of strategies that might be applicable to U.S. biological weapons nonproliferation policies (particularly those concerning the Biological and Toxins Weapons Convention).

Center for Strategic and International Studies
Washington, DC, USA

\$310,720

2002–2005

Integrating Scientists into the International Research Community

To further integrate former Soviet Union scientists into the international research community, by funding 20 scientists from the former Soviet bioweapons program to attend a variety of highly respected research conferences that bring together top scientists to present and discuss cutting-edge scientific research and ideas.

Gordon Research Conferences

West Kingston, RI, USA

\$80,000

2001–2005

Leveraging the Peaceful Conversion of Former Biowarfare Institutes

To solicit the participation of Western pharmaceutical companies in research collaboration with former Soviet bioweaponers, enhancing the understand-

ing necessary to underpin governmental support of “braindrain” prevention programs.

*Center for Strategic and International Studies
Washington, DC, USA*

\$762,965

2002–2005

Reducing the Likelihood of Leakage of Bioweapons-related Materials and Expertise

To present a five- to ten-year vision of a biological research and production environment in Russia that reduces the likelihood of the outflow of bioweapons-related materials and expertise from Russian facilities to hostile states and terrorist groups.

National Academy of Sciences, Washington, DC, USA (in partnership with the Russian Academy of Sciences, Moscow, Russia)

\$200,000

2002–2004

Community Preparedness Bioterrorism Scorecard

To create an effective framework for preparedness assessment that elected officials, community leaders and the public can draw upon in evaluating and improving community preparedness in the event of bioterrorism.

*Milne & Associates, LLC
Portland, OR, USA*

\$84,000

2003–2004

Anti-Plague System Assessment

To examine the anti-plague system of the FSU regarding biosecurity and proliferation of biological agents, with the goal of improving the security and safe handling of dangerous pathogens, and to examine the potential conversion of the system for broader public health and bioterrorism surveillance, with particular emphasis on institutes in Uzbekistan, Kazakhstan and Georgia.

Kazakh Institute for Research on Plague Control, Almaty, Kazakhstan;

*Monterey Institute of International Studies
Monterey, CA, USA*

\$750,000

2002–2004

Biological and Agricultural Anti-Terrorism Partnership

To support new dialogue and partnerships among public health, agriculture, intelligence and law enforcement professionals on how to meet biological and agricultural terrorist threats, providing a much needed forum to surface critical issues and develop strategies to address them.

*ANSER Institute for Homeland Security
Arlington, VA, USA*

\$500,000

2002–2004

Public Health Preparedness: State of Georgia Planning and Practice Model

To improve bioterrorism preparedness, initially in the state of Georgia and subsequently in other jurisdictions, by assessing the preparedness of Georgia’s public health and emergency response systems through a series of site visits and tabletop exercises to be conducted at the state and local levels; refining training and assessment materials, including template exercises, for use in other states; providing joint terrorism-related training for state and local security and health agencies; and evaluating project results. The Robert W. Woodruff Foundation has also committed \$210,000 to this project.

*RAND Corporation, Arlington, VA, USA;
State of Georgia;*

Emory University, Atlanta, GA, USA

\$287,500

2004–2005

Addressing the Challenge of Proliferation

To convene a series of meetings focused on the question of whether the United States is taking the right steps to diminish the risk that weapons of mass destruction will be used to attack the United States or one of its allies.

*Aspen Strategy Group
Washington, DC, USA*

\$25,000

2004–2005

STRENGTHENING GLOBAL PUBLIC HEALTH AND PREPAREDNESS

Global Public Health Intelligence Network II

To develop and integrate Russian, Spanish, Arabic, French and Simplified and Traditional Chinese language translation software into the Global Public Health Intelligence Network (GPHIN), which gathers and disseminates preliminary reports of global public health threats from global electronic media and websites using both human review and computerized text mining to filter, organize and classify this information.

*The Public Health Agency of Canada
Ottawa, Ontario, Canada*

\$350,000

2003–2004

Strengthening National Health Preparedness

To assess national preparedness for biological and chemical attacks 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

2004–2005

Surveillance of Emerging Infectious Diseases in the New Independent States

To build a Russian-language electronic network to help in the detection and dissemination of information about possible outbreaks of infectious diseases in the new independent states. This network will be integrated into an existing global disease monitoring system (Pro-Med) and will enhance the ability of the public health community to recognize and respond to outbreaks in the region.

*International Society for Infectious Diseases
Boston, MA, USA*

\$65,000

2003–2004

Regional Reference Laboratory for Diagnosis of Viral Hepatitis: From Bio-defense to Public Health

To integrate former biodefense scientists into regional public health services and reduce the toll of hepatitis throughout Russia and the surrounding territories, by establishing a regional reference laboratory, starting a new training program to diagnose hepatitis and instituting disease surveillance sites.

State Research Center of Virology and Biotechnology (VECTOR)

Novosibirsk, Russia

\$350,000

2003–2005

India Field Epidemiology Training Program

To develop a cadre of Indian field epidemiologists proficient in identifying, investigating and controlling infectious disease threats, including those caused by existing and potential agents of bioterrorism. The program, established in Chennai, India, is modeled after the Epidemic Intelligence Service of the U.S. Centers for Disease Control and Prevention (CDC), and will serve as an anchor for broader regional surveillance efforts.

CDC Foundation

Atlanta, GA, USA

\$352,000

2002–2005

Hepatitis Vaccine Manufacturing Feasibility Study

To determine the feasibility of commercially manufacturing Hepatitis A, Hepatitis B and Hepatitis A/B vaccines at a proposed new vaccine production facility at VECTOR in Novosibirsk, Russia, involving Russian professionals previously engaged in biological weapons work. The project includes the preparation of a preliminary business plan designed to attract commercial investors for building the new vaccine production facility at VECTOR.

*State Research Center of Virology and Biotechnology (VECTOR), Novosibirsk, Russia;
The High Technology Foundation/Gorbachev Project, Moscow, Russia*

\$250,000

2003–2005

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 in the United States and throughout the world.

*All-Russian Research Veterinary Institute
Kazan, Russia;*

*The International Science and Technology
Center, Moscow, Russia (in conjunction with
the U.S. Department of State)*

\$550,000

2003–2005

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 Palestine Authority, Jordan and Egypt and by designing an infectious disease epidemiology course to build regional rapid response capabilities in the face of disease outbreaks.

Search for Common Ground

Washington, DC, USA

\$737,000

2004–2005

Enhancing Food System Biosecurity

To facilitate national food system biosecurity leadership, plan for national food system information sharing and analysis, develop Internet-based materials for government and industry officials and offer food biosecurity training in order to strengthen the ability of the farm-to-table food system to prevent, detect and respond to bioterrorist attacks.

*University of Minnesota Center for Infectious
Disease Research and Policy*

Minneapolis, MN, USA

\$500,000

2002–2004

Safe Food International Conference

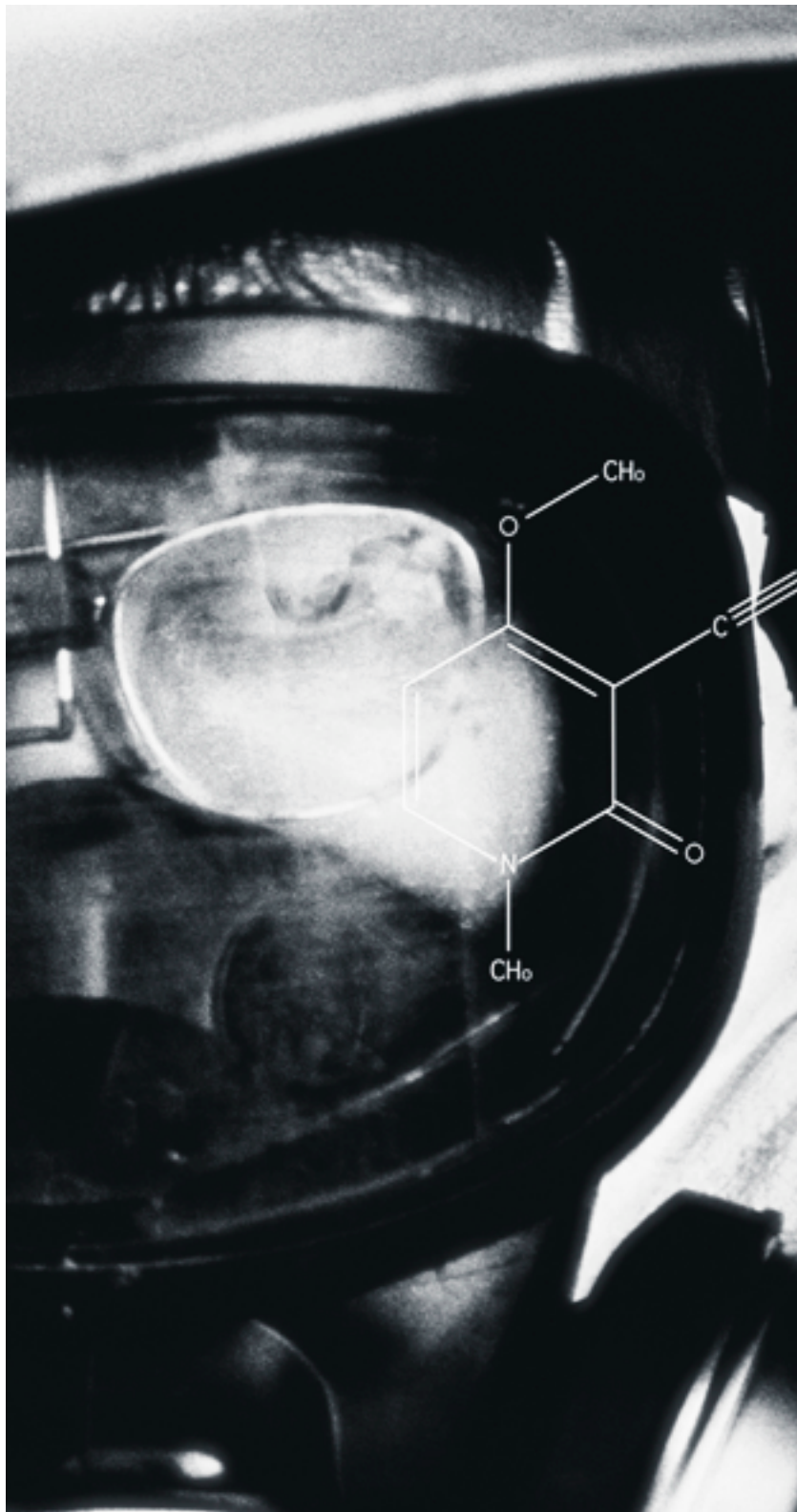
To help nations around the world defend against food-borne illnesses, including intentional contamination of food products, by bringing together interested parties for an international conference to develop responsible food-safety policies and strategies for implementation of safe food guidelines.

Center for Science in the Public Interest

Washington, DC, USA

\$200,000

2004



CHEMICAL



The Nature of the Threat

Chemical weapons, such as sarin and mustard gas, can sicken and kill in minute quantities when properly distributed. With the entry into force of the Chemical Weapons Convention in 1997, nations agreed to destroy existing chemical weapons stocks and forgo research and acquisition of such weapons in the future. At the time, 26 nations had declared or were suspected of having chemical weapons programs.

“Chemical agents are widespread and relatively easy to acquire and weaponize. There are almost 6,000 industrial chemical facilities worldwide, posing potential targets and opportunities for the acquisition of materials.”

2004 UN High Level Panel on Threats, Challenges and Change

The United States and Russia currently have more than 90 percent of the 71,000 metric ton total declared global stockpile of chemical agents, only 15 percent of which has been verifiably destroyed since 1997. The pace of chemical weapons destruction must be accelerated and the scope of activities

expanded. Both nations have committed under the Chemical Weapons Convention to destroy these weapons and production capacity, but the sudden collapse of the Soviet Union in 1991 and the current state of the Russian economy have resulted in a vulnerable supply of weapons, equipment and know-how.

The United States and other nations are supporting Russia to meet its international commitments, but progress has been delayed by disputes over destruction technologies, lack of funding for destruction in Russia and bureaucratic obstacles on all sides. Security at many sites in Russia is dangerously weak. Furthermore, chemical weapons in the United States and Russia have exceeded their intended shelf life and are vulnerable to leaking dangerous chemicals.

In 2003, the Albanian government declared a 16-ton stockpile of chemical weapons, which was stored at a small army outpost, less than 25 miles from the country's capital, Tirana. These lethal chemical stocks, which had been purchased from China in the 1970s, had been forgotten and for more than a decade were unaccounted for. As its first Nunn-Lugar Cooperative Threat Reduction project outside the former Soviet Union, the United States will provide \$20 million for destruction of Albania's chemical weapons cache.

If the Albanians had not discovered these chemical stocks first, they could have been

“We commit ourselves to prevent terrorists or those that harbor them, from acquiring or developing nuclear, chemical, radiological and biological weapons.”

Statement of the Group of Eight leaders, 2002 Summit in Canada

“The president has argued, quite correctly, that the most important security problem in the world is the proliferation of weapons of mass destruction. Yet to this day, there are some people who oppose spending this money—people who say that the Russians and the Albanians should take care of their own problems. But given how these weapons are already dispersed, there’s a real possibility that one could be stolen and used to kill a lot of people. To me, you can’t do enough to make sure the American people are spared from that sort of thing.”

U.S. Senator
Richard G. Lugar

easily stolen and sold to the highest bidder. Although Albania’s stockpile is small in comparison with U.S. and Russian stockpiles, it represents one of the many weapons caches around the world that are unaccounted for or poorly secured—a highly attractive commodity to terrorists.

While the chemical threat does not compare to the magnitude of threats posed by nuclear and biological weapons, inadequately secured chemical weapons stockpiles constitute a weak link in the chain of global security that could readily be exploited by terrorists, with deadly results. We must secure and dismantle chemical weapons, eliminate the infrastructure that produced them and redirect know-how to peaceful pursuits.

Separately, there are more than 6,000 commercial chemical facilities around the world which use, produce or store toxic materials which could be deadly if released into the atmosphere. In March 2003, the General Accounting Office (GAO) found that in the United States, more than 700 chemical facilities working with highly toxic chemicals are located close enough to populated areas so that a terrorist attack against the plant could endanger at least 100,000 lives.

STRATEGIES FOR THREAT REDUCTION

NTI is engaged in a number of projects that not only reduce the risks of nuclear and biological weapons use, but also address chemical weapons threats.

NTI is working to promote the effective and timely implementation of the G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. The G8 has pledged \$20 billion to support nonproliferation projects, initially in the former Soviet Union, over the next decade. Russia has identified chemical weapons destruction as one of its highest priorities for cooperation under the Global Partnership, and Global Partnership nations have contributed a total of \$1.5 billion to chemical weapons destruction projects in Russia.

NTI is promoting cross-border cooperation in responding to chemical accidents through its **Middle East Confidence Building** project as a first step in building the channels for dialogue on weapons of mass destruction threats among the states of the Middle East. In March 2004, chemical and emergency response experts from Egyptian, Israeli, Jordanian and Palestinian non-governmental organizations participated in their fourth meeting to discuss chemical risks in the region. At this meeting they worked through a scenario-

based exercise of a catastrophic accident sending chemical clouds over cities in each of their countries. After describing their countries' individual ability to respond to such an incident, the participants discussed how they work together and agreed on the necessity of forming a regional emergency response center. The participants agreed that, as their next project, they would design such a center and publish the design as a recommendation to regional authorities. This will be the next in a series of publications on chemical incident response, which is filling a gap in disaster response literature for the Middle East and serving as an important example of transparency and cooperation.

Together with international partners, NTI is **Supporting Chemical Weapons Destruction** in Russia by contributing to high-priority infrastructure necessary for the U.S.-funded Shchuch'ye Chemical Weapons Destruction Facility. This site holds more than 1.9 million chemical weapons, some without proper security. To assist Russia in gaining international resources for these critical projects, NTI issued a \$1 million challenge grant conditioned on being matched by a minimum of \$2 million in new contributions. NTI signed a Contribution Agreement with the government of Canada, a member of the G8 Global Partnership, for up to \$25 million to construct a 22-kilometer railway connecting the current weapons storage sheds with the Destruction Facility to help speed the elimination of these dangerous weapons.

NTI Projects Approved or Ongoing in Fiscal Year 2004



Chemical weapon shells in Shchuch'ye, Russia. There are 1.9 million shells at this facility.

Supporting Russian Chemical Weapons Destruction

To provide \$1 million if matched by a minimum of \$2 million from other sources for high-priority infrastructure development for the Shchuch'ye Chemical Weapons Destruction Facility. NTI has signed a Contribution Agreement with the government of Canada for up to \$25 million to construct a railway that will help speed the elimination of these dangerous weapons.

Global Partnership Program

Canada Department of Foreign Affairs and International Trade

Ottawa, Canada

Up to \$1,000,000

2005–2006

Middle East Confidence Building

To foster cross-border cooperation in responding to nuclear, biological and chemical attacks or accidents by engaging prominent regional experts in national security, emergency management, civil defense and public health. Participants from Egypt, Israel, Jordan and the Palestinian Authority have formed a consortium on chemical risks, which met for the fourth time in 2004 for a scenario-based exercise of a catastrophic chemical accident in the region.

Search for Common Ground

Washington, DC, USA

\$555,000

2002–2004

- comes EU-Iran Agreement: Is Iran Providing Merely Providing Amusement? (December 15)
- als: A Global Strategy for Combating the r Weapons Technology or a Sanctioned (December 1)
- Nuclear Suppliers Group: Positive Steps in the against Nuclear Weapons Proliferation
- relations and Subsequent Changes to Controls (October 27)
- Disarmament a Significant Success for ? (September 24)
- Doctrine (September 16)
- ion and the Arms Ban on China (July 30)
- Plutonium Programs (July 27)
- aterials in Russia (July 27)
- Nuclear Security Initiatives (July 7)
- ership 2004 (July 2)
- ores Iran's Failure to Come into Full atience with Iran Running Out? (June 28)
- istance and Radiological Terrorism (April 27)
- spasse with the element of the element (April 1)
- urity Assurances: Is Any Progress Possible?
- nd Bush Administration Policy: Results of the
- ment Assistance (April 20)
- ng Hoaxes: A Short History of Scams Involving Osmium-187 (April 1)
- ear Initiatives: An Alternative Paradigm for rch 31)
- Acquire Nuclear Weapons? (March 23)
- pread of Cruise Missiles and Unmanned Air (March 23)
- Pakistan: The Sorry Affairs of the Islamic (6)
- allenges Change Japanese Security Policy?

- Nuclear Weapons and Arms Control
- » China Enters the Nuclear Suppliers Group: Positive Steps in the Global Campaign against Nuclear Weapons Proliferation
 - » Bush-Putin Summit, November 2001 на русском (In Russian)
 - » Comprehensive Test Ban Treaty (CTBT) на русском (In Russian)
 - » DOE's Domestic Nuclear Security Initiatives
 - » IAEA Board Deplores Iran's Failure to Come into Full Compliance: Is Patience with Iran Running Out?
 - » IAEA Board Welcomes EU-Iran Agreement: Is Iran Providing Assurances or Merely Providing Amusement?
 - » Illicit Nuclear Trafficking in the NIS на русском (In Russian)
 - » Indo-Pakistani Military Standoff: Why It Isn't Yet
 - » Iran and the IAEA: A Troubling Past with a Hopeful Future?
 - » Nuclear Posture Review на русском (In Russian)
 - » Nuclear Submarine Dismantlement на русском (In Russian)
 - » Nuclear Trafficking Hoaxes: A Short History of Scams Involving Red Mercury and Osmium-187
 - » Plutonium Disposition на русском (In Russian)
 - » Presidential Nuclear Initiatives: An Alternative Paradigm for Arms Control
 - » Risks of Civilian Plutonium Programs
 - » Russian Spent Nuclear Fuel на русском (In Russian)
 - » Russia's Nuclear Doctrine
 - » Submarine Dismantlement Assistance
 - » Tactical Nuclear Weapons (TNW) на русском (In Russian)
 - » The AQ Khan Revelations and Subsequent Changes to Pakistani Export Controls



COMMUNICATIONS



NTI's public awareness projects are reducing the 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.

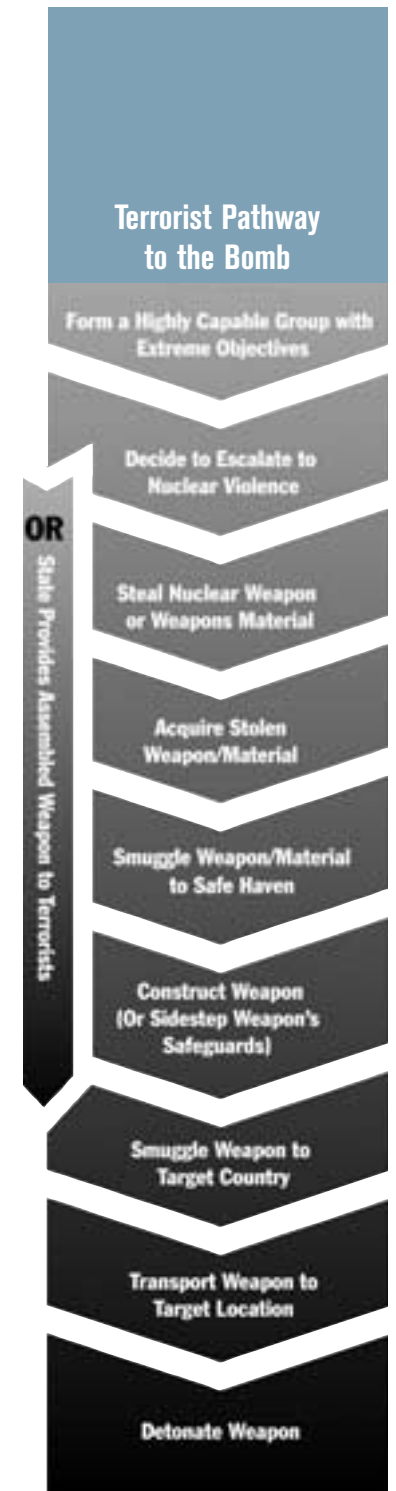
NTI's communications work seeks to:

- ▶ Increase the quality and accessibility of information about the threats from nuclear, biological and chemical weapons;

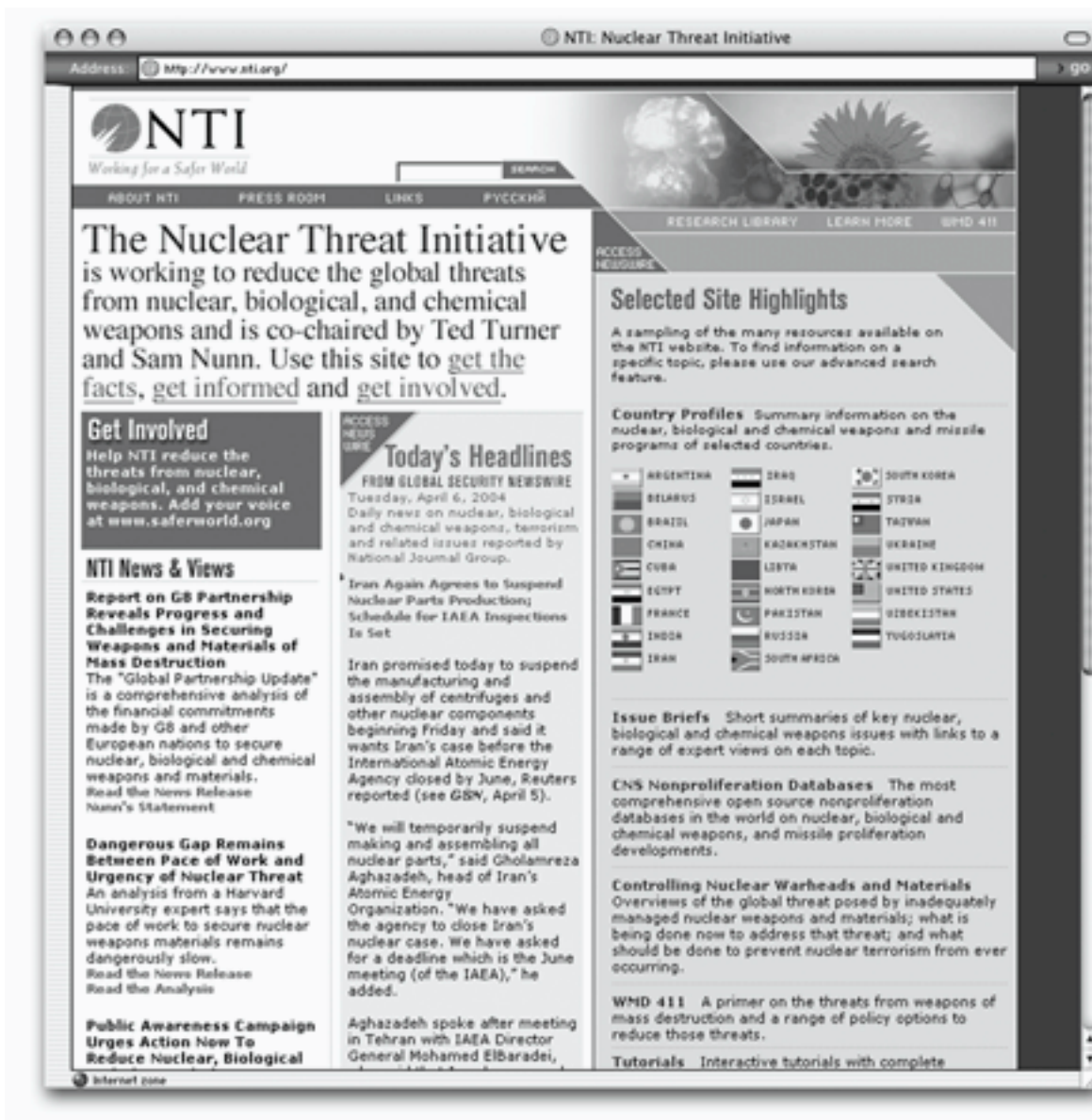
“In the wake of these gruesome acts of terror...we must realize we need to step up efforts to prevent terrorists from getting nuclear materials. We need new approaches.”

Alexander Rumyantsev
Russian Federal Atomic Energy Agency Chief

- ▶ 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; and
- ▶ 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.



Get the facts. Get informed. Get involved. WWW.NTI.ORG



NTI's website offers daily news and in-depth resources about the global threats posed by nuclear, biological and chemical weapons, terrorism and related issues. Working with National Journal Group, the Center for Nonproliferation Studies at the Monterey Institute of International Studies and others, NTI has built an essential online tool for anyone conducting research into weapons of mass destruction, with resources in English and Russian.

HIGHLIGHTS OF WWW.NTI.ORG

- ▶ **Global Security Newswire** is a free, daily news service covering global developments on nuclear, biological and chemical weapons issues. In addition to offering a comprehensive survey of the day's news from around the world, *Global Security Newswire* provides original news coverage, including in-depth interviews and special reports. www.nti.org
- ▶ **Issue Briefs** that offer a short introduction and in-depth analysis on a wide range of international security issues, including topics such as "Assessing the Threat of Mass Casualty Bioterrorism" and "The AQ Khan Revelations and Subsequent Changes to Pakistani Export Controls." www.nti.org/issuebriefs
- ▶ **Country Profiles** with descriptions of nuclear, biological and chemical weapons and missile programs for more than 25 countries. www.nti.org/countries

“Both candidates [George W. Bush and John Kerry] called nuclear proliferation the greatest threat to American security.”

The New York Times, October 2, 2004, regarding the September 30 U.S. Presidential debate.

- ▶▶ **Self-Guided Tutorials** on Biological Warfare Terrorism, the Nuclear Non-Proliferation Treaty, Chemical Warfare Terrorism, Nuclear Terrorism and Radiological Terrorism. www.nti.org/tutorials
- ▶▶ **Nonproliferation Databases** with the world's most comprehensive, open-source information containing current and archived material from a wide range of sources including academic and trade journals, government and defense publications, periodicals and electronic news sources, United States congressional testimony, conference proceedings, books, United Nations and International Atomic Energy Agency (IAEA) documents, correspondence from international advisors, unpublished papers and Internet sources. www.nti.org/db
- ▶▶ **Publications and source documents** from nongovernmental organizations and government bodies with access to agreements, research papers, journal articles and white papers. www.nti.org/docs

- ▶▶ **WMD411**, an information resource on the threats from nuclear, biological and chemical weapons that explores a range of policy options to reduce these weapons threats and includes a chronology of key events and a glossary explaining key terms. www.nti.org/wmd411
- ▶▶ **A Teacher's Toolkit**, designed for educators, includes sample syllabi and links to a web resources guide, a glossary of nonproliferation terms and self-guided tutorials. www.nti.org/tt
- ▶▶ **General information** about NTI available in both Russian and English including biographies of NTI Board Members and staff, NTI's mission and programs fact sheet. www.nti.org/aboutnti

The website is updated daily with new information and resources. Bookmark the site at www.nti.org

Act Now for a Safer World

Through a targeted public education campaign in Iowa and New Hampshire, **Act Now for a Safer World**, NTI took advantage of the national attention on these states during the presidential primaries to raise awareness of the threats from nuclear, biological and chemical weapons.

Through paid advertising, free media outreach, on-line organizing and direct citizen outreach, NTI urged citizens to tell the candidates to make these issues a higher priority. One key message was at the current pace it would take existing governmental programs 13 years to lock down and secure nuclear materials in Russia and that if it were made a priority, it could be done in four years. The results were impressive: over the course of the campaign, presidential candidates laid out more detailed plans on these issues; citizens and reporters began asking the candidates questions about the NTI/Safer World agenda; during a nationally televised debate, the moderator asked a question specifically about one of NTI's TV ads; editorial boards pressed the candidates on these issues and public opinion research confirmed the penetration and effectiveness of the public education project.

The issue of nuclear terrorism and what should be done to prevent it continued to be an issue during the general election with President Bush and Senator Kerry agreeing that the biggest threat to the United States was a nuclear weapon in the hands of a terrorist. Senator Kerry said that the current pace of 13 years to complete the work wasn't fast enough and that as president he would get the job done in four years.

Last Best Chance

A Russian gangster approaches a guard from a nuclear weapons storage facility and seeks his cooperation in stealing two nuclear warheads. Meanwhile, a team of camouflage-clad terrorists slips into a nuclear research reactor in an Eastern European country. Assisted by employees at the facility, they take rods of highly enriched uranium, the raw material of nuclear terrorism, and disappear into the night. They head to a safe house, equipped with machine tools, chemicals, bomb designs and a munitions expert—everything necessary to build a nuclear weapon and move it to the target. About the same time, in South Africa, a trusted scientist walks out the door of a research reactor with sheets of highly enriched uranium in his briefcase, as he has been doing over a period of weeks, to sell terrorists enough material to make a nuclear bomb. All three attempts are commissioned by al Qaeda, which, once it obtains the highly enriched uranium, effectively becomes a nuclear power.

The scenario above is from a docudrama commissioned by NTI, the Carnegie Corporation of New York and the John D. and Catherine T. MacArthur Foundation, to draw attention to the urgent threat of nuclear terrorism and the urgent need to dramatically accelerate efforts to lock down nuclear weapons and materials on a global basis. The film is based on facts about the vulnerability of

nuclear weapons and materials to theft. As far as we know, the scenario in the film is fiction. Yet it may happen in the near future—if we don't start racing to stop it.

Acquiring 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.

Free copies of the film are available for individuals or organizations interested in hosting a screening. To get a copy of the film call 1-800-336-0035 or log on to www.saferworld.org.

Controlling Nuclear Warheads and Materials

By supporting research and analysis of current global efforts to keep nuclear weapons, material and know-how out of terrorist hands, NTI has helped shape the public debate on these activities and has catalyzed greater government action to accelerate and expand the scope of this work.

Working closely with Harvard University's Managing the Atom Project, NTI commissioned a series of annual reports, tracking progress in securing nuclear warheads and materials and making recommendations for accelerating this work. The Managing the Atom Project has developed and maintains

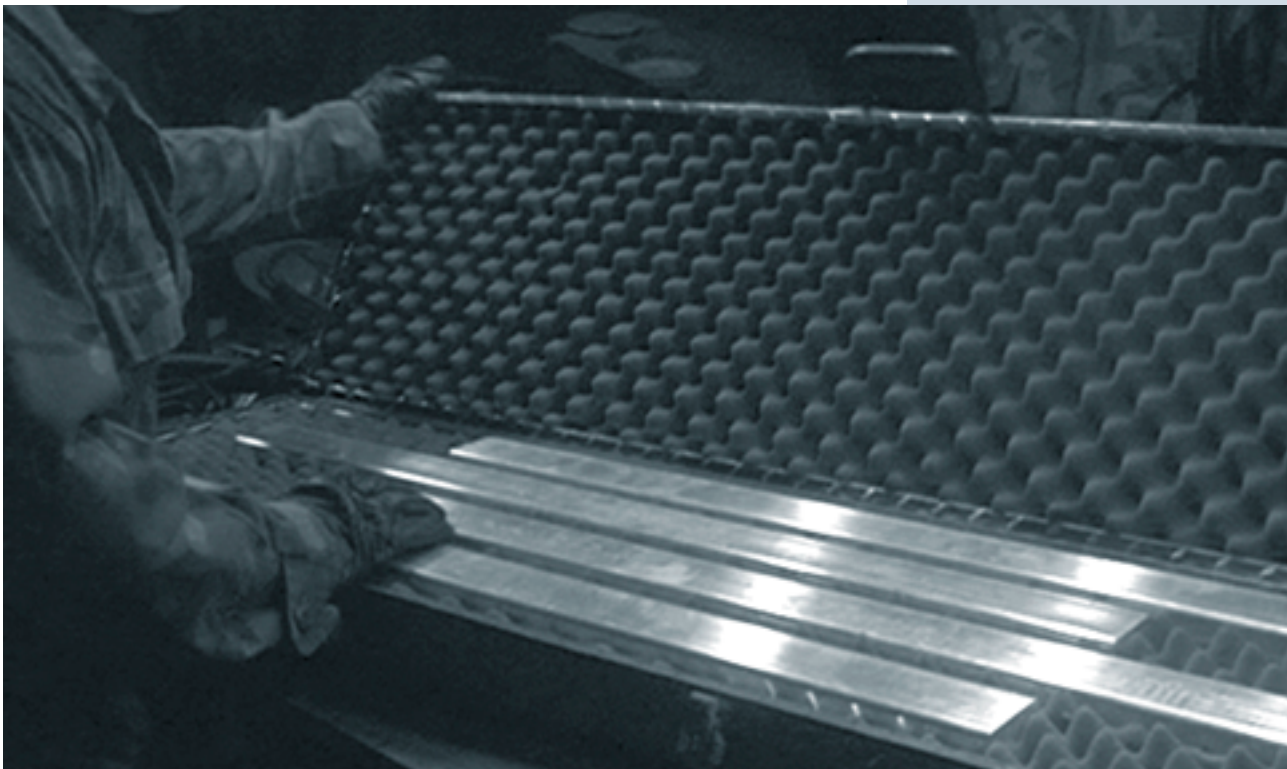


an in-depth section on NTI's website that provides detailed information on U.S.-funded programs designed to secure, monitor and reduce the size of nuclear stockpiles and weapons complexes. Together, the reports and the NTI web section serve as the only available source for "one-stop shopping" for information on all aspects of these critical programs. www.nti.org/cnwm.

These reports have provided new thinking that, in combination with several NTI direct action projects, helped catalyze major government initiatives, such as the removal of highly enriched uranium from research reactors around the world and efforts to accelerate cooperative security upgrades for nuclear weapons and materials in Russia.



Scenes from *Last Best Chance*, a nuclear terrorism docudrama.



Terrorists are racing to get nuclear, biological and chemical weapons. We are not yet racing to stop them. These are just a few of the known attempts.

2002 Diagrams of crude nuclear weapons are found in an al Qaeda safe house.

2002 A Russian newspaper reports that military counterintelligence “foiled four attempts” by terrorists to access Russian nuclear stockpiles and nuclear warhead storage sites. (*Rossiiskaya Gazeta*, 11/1/02)

2001 Russian customs official reports detecting more than 500 incidents of illegal transport of nuclear and radioactive materials across the Russian border in 2000. (*ITAR-TASS*, 4/2/01)

2000 A Russian security official reports the Taliban tried to recruit a Russian nuclear expert. (*Radio Free Europe/Radio Liberty*, 10/9/00)

1999 An al Qaeda nerve gas progress report found in Afghanistan concludes that the efforts to make such weapons without specialists had “resulted in a waste of effort and money,” and recommends recruiting experts as the “fastest, cheapest and safest way: to make them.” (*The Wall Street Journal*, 12/31/99)

Acquiring 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.

NTI Projects Approved or Ongoing in Fiscal Year 2004

Global Security Newswire

To support a one-stop global newsstand—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

\$796,978

2004–2005

Online Research Center and Library

To develop and maintain for the NTI website a comprehensive 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

\$650,488

2004–2005

Tracking U.S. Government Efforts to Address Biological Threats

To analyze U.S. government investments in bioweapons prevention and preparedness, examining programs and policies, funding levels, gaps in program activities and the effectiveness of work with recommendations for strengthening the value and pace of current activities and identify critical needs for the future.

Chemical and Biological Arms Control Institute

Washington, DC, USA

\$389,716

2002–2004

Publication of “Four Faces of Nuclear Terrorism”

To support the publication of a study by the Center for Nonproliferation Studies on the different forms nuclear terrorism could take, with recommendations for preventing each.

Monterey Institute of International Studies

Center for Nonproliferation Studies

Monterey, CA USA

\$25,000

2004

South Asian Security and WMD Website Module

To continue a WMD 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

\$150,000

2004–2006

Tracking U.S.-Russian Cooperative Nuclear Security

To track the progress and budgets of U.S.-Russian cooperative nuclear security programs with an annual report and website and make recommendations for accelerating the pace and effectiveness of this 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

\$309,930

2004–2006

Act Now for a Safer World: A Public Awareness Project

To increase public understanding that the top security threat is a terrorist attack with nuclear, biological or chemical weapons and that the most effective way to protect ourselves is for all nations to work together in a Global Partnership to secure weapons and materials at their source.

NTI

\$1,950,000

2003–2004

Student Outreach

To conduct outreach activities on college campuses in Iowa and New Hampshire to support NTI's Act Now for a Safer World project.

Student Pugwash, USA

Washington, DC

\$15,000

2003–2004

Public Opinion Project

To conduct public opinion research on the threats from weapons of mass destruction.

NTI

\$339,500

2002–2004

Public Education on Nuclear Threats—Last Best Chance

To produce and distribute a docudrama that will bring to life the threat of nuclear terrorism. The film will highlight the threats, state what should be done to address them and remind viewers of the real human, political and economic costs of a nuclear terrorism incident.

NTI (in conjunction with the Carnegie Corporation of New York and the John D. and Catherine T. MacArthur Foundation)

\$1,000,000

2004–2005

Research and Analysis

To provide research and analytic support to NTI and/or complete studies on emerging proliferation issues or topics.

Monterey Institute of International Studies

Center for Nonproliferation Studies

Monterey, CA, USA

\$75,885

2004–2005

Collaborative Education and Cooperative Security: A Joint Curriculum Project on Reducing the Nuclear Threat

To bring together Russian and American security experts to develop joint course materials that compare current nuclear security issues with the Cold War experience and explore new cooperative security arrangements to move from deterrence to reassurance.

School for International Security and World Politics at the Institute of U.S.A. and Canada Studies in Moscow, Moscow, Russia; Center for International and Security Studies at Maryland, School of Public Affairs, University of Maryland, College Park, MD, USA

Up to \$735,178

2001–2005





BOARD OF DIRECTORS

NTI's Board of Directors guides the overall philosophy and direction of the organization. NTI Board Members share the common goal of taking action to reduce the gap between the global threats and the global response and bring broad vision and experience to this important mission.

**Not Shown: U.S. Senator Pete V. Domenici,
Hon. Pierre Lellouche, Ambassador
Vladimir P. Lukin, Professor Amartya Sen,
Rt. Hon. Professor Shirley Williams**

R.E. (Ted) Turner



Ted Turner, Co-chairman of the Nuclear Threat Initiative, is the founder of CNN, the world's first live, in-depth, around-the-clock news television network. Mr. Turner spent nearly 30 years building Turner Broadcasting System into one of the nation's largest media conglomerates. The company merged with Time Warner in 1996.

Mr. Turner began his career as an account executive for Turner Advertising Company, later to become Turner Broadcasting System. He bought his first television station in 1970 and later purchased Major League Baseball's Atlanta Braves. Mr. Turner pioneered the "superstation" concept, transmitting a station's signal to cable systems nationwide via satellite.

He founded the cable channels TNT, Cartoon Network and Turner Classic Movies, a 24-hour commercial-free network. He expanded Turner Broadcasting's news division with the creation of CNNRadio, CNN Airport Network and a 24-hour sports network.

A philanthropist and supporter of a number of humanitarian causes, Mr. Turner founded the United Nations Foundation and the Goodwill Games, an international, world-class, quadrennial, multisport competition. Mr. Turner is the recipient of numerous honorary degrees, industry awards and civic honors, including being named *Time* magazine's 1991 Man of the Year and one of two Men of the Century by *Broadcasting & Cable Magazine* in 1999.

Sam Nunn



Sam Nunn is Co-chairman and Chief Executive Officer of the Nuclear Threat Initiative. He served as a U.S. Senator from Georgia for 24 years (1972–1996) and is retired from the law firm of King & Spalding.

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, D.C.

Charles B. Curtis



Charles B. Curtis is the President and Chief Operating Officer of the Nuclear Threat Initiative. Previously, Mr. Curtis served as the Executive Vice President and Chief Operating Officer of the United Nations Foundation (UNF).

Before joining UNF, Mr. Curtis 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 over 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.

U.S. Senator Pete V. Domenici



U.S. Senator Pete V. Domenici (R-New Mexico) is a strong proponent of creating and sustaining programs focused on reducing the threats from weapons of mass destruction.

As Chairman of the Senate Energy and Natural Resources Committee and the Senate Energy and Water Development Appropriations Subcommittee, he has promoted legislation to bolster U.S. efforts to prevent the proliferation of nuclear weapons and the components to build such weapons. He has 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. A 25-year veteran of the Senate Budget Committee, Senator Domenici is also recognized as one of the nation's foremost experts on the federal budget.

Susan Eisenhower



Susan Eisenhower, President of the Eisenhower Group, Inc., is best known for her work on U.S.-Russian relations and international security issues. Co-founder of the Center for Political and Strategic Studies, Ms. Eisenhower previously led The Eisenhower Institute as President and CEO after the two organizations combined programs in 2000. She continues her association with The Eisenhower Institute as a Distinguished Fellow.

In the spring of 2000, Ms. Eisenhower was appointed by the U.S. Secretary of Energy to a blue ribbon task force, the Baker-Cutler Commission, to evaluate U.S.-funded nonproliferation programs in Russia, and since that time she has also served as an advisor to another Department of Energy study. She has also served as an Academic Fellow of the International Peace and Security program of the Carnegie Corporation of New York. Ms. Eisenhower has received three honorary doctorates and a number of other awards for her work in U.S.-Russian relations.

Ms. Eisenhower has spent over 20 years of her career on foreign policy issues, though she came to the field from the business community. A onetime consultant to IBM, American Express and Loral Space Systems, she was appointed in 1998 to the National Academy of Sciences' standing committee on international security and arms control. She carries on this work through her company.

Ms. Eisenhower is the author of two best-selling books: *Breaking Free* and *Mrs. Ike*. She has edited four collected volumes on regional security issues and written hundreds of op-eds and articles on foreign policy for major newspapers and other national publications. In addition to NTI's board, Ms. Eisenhower serves on a number of boards of corporations, foundations and educational institutions.

Ambassador Rolf Ekeus



Ambassador Rolf Ekeus serves as Chairman of the Board of the Stockholm International Peace Research Institute. He has filled a number of diplomatic posts, including Swedish Ambassador to the United States and head of the United Nations Special Commission on Iraq.

In the summer of 2001, Ambassador Ekeus was appointed High Commissioner on National Minorities by the Organization for Security and Cooperation in Europe (OSCE). In October 2000, the Swedish government appointed him as a special commissioner to carry out investigations on Sweden's security policy during the Cold War on the issue of political and military handling of foreign submarine intrusions into Swedish territorial waters from 1980 until the present. In 2002 and 2003, respectively, he presented his official reports on the two issues.

Between 1997 and 2000 Mr. Ekeus served in Washington, DC as Sweden's Ambassador to the United States.

Ambassador Ekeus 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 charge of detection and elimination of Iraq's weapons of mass destruction. He also served as ambassador and head of the Swedish delegation to the Conference on Security and Cooperation in Europe and to the Geneva Conference on Disarmament. He was chairman of the international negotiations on the Chemical Weapons Convention.

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

General Eugene E. Habiger



General Eugene Habiger has more than 35 years of experience in national security and nuclear operations. In his role as commander in chief of the U.S. Strategic Command, General Habiger was responsible for all U.S. Air Force and U.S. Navy strategic nuclear forces. During his tenure, General

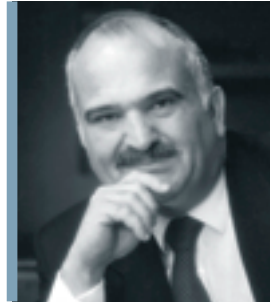
Habiger established an unprecedented military-to-military relationship with his counterpart in Russia. He brings a unique, in-depth understanding of nuclear operations and nuclear policy to NTI.

General Habiger also served as the U.S. Department of Energy's Director of Security and Emergency Operations. In this role, he oversaw all security functions, including safeguards and security policy, cyber-security, and emergency operations functions.

A command pilot with more than 5,000 flying hours, primarily in bomber aircraft, General Habiger flew 150 combat missions during the Vietnam War.

He is a Distinguished Fellow and Policy Advisor at the University of Georgia's Center for International Trade and Security. General Habiger also serves on the board of the Armed Services YMCA and the Fischer House Foundation of San Antonio and is a Senior Fellow with the Gorbachev Foundation and a Fellow with the Club of Madrid.

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 groups of 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 interfaith issues, with particular emphasis 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 Chairman of the Arab Thought Forum, President of the Club of Rome and moderator of the World Conference for Religions and Peace.

His Royal Highness is the author of six books: *A Study on Jerusalem* (1979); *Palestinian Self-Determination* (1981); *Search for Peace* (1984); *Christianity in the Arab World* (1994); and *Continuity, Innovation and Change: Selected Essays* (2001). He is joint author of *To Be a Muslim* in the English, Italian and French languages (2001).

Dr. Andrei Kokoshin



Dr. Andrei Kokoshin is a scientist, scholar and author and is a Member of the State Duma of the Russian Federation.

Between 1992 and 1997, Dr. Kokoshin served as First Deputy Minister of Defense of the Russian Federation and as State Secretary.

From 1997 to 1998, Dr. Kokoshin was Secretary of Defense Council and Chief Military Inspector and then became Secretary of Russia's Security Council.

Dr. Kokoshin is the Director of the Institute for International Security Studies at the Russian Academy of Natural Sciences and served as the acting Vice President of the Academy from 1998 to 1999. In 2003 he was elected to the post of Chairman of the State Duma's Committee for the Commonwealth of Independent States' Affairs and Relations with Compatriots. That same year he became Dean of the School of World Politics at Moscow State University. Dr. Kokoshin is also a member of the Scientific Advisory Council of the Institute for International Studies at Stanford University.

Dr. Kokoshin holds an engineering degree in radioelectronics from Moscow Higher Technical School and a doctorate in political science. He is the author of 12 books on international security, political and military affairs and defense industry policy.

The Honorable Pierre Lellouche



Pierre Lellouche has been a member of the French National Assembly since 1993 and was recently elected President of the NATO Parliamentary Assembly. He is the Deputy Secretary General of his party, the Union pour un Mouvement Populaire, and a practicing attorney with Clyde and Co., Paris.

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.

Mr. Lellouche was a Co-founder and Deputy Director of the French Institute for International Affairs (IFRI). 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 a member of the Trilateral Commission and the Council of the International Institute for Strategic Studies. Pierre 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 *Journal of Arms Control and Security Studies*.

Lellouche is the author of several books including *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 master's and doctorate degrees.

U.S. Senator Richard G. Lugar



U.S. Senator Richard G. Lugar (R-Indiana) is Chairman 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 elected to the U.S. Senate in 1976 and in 2000 won his third

consecutive victory by a two-thirds majority. He is the longest-serving member of Congress from Indiana.

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 6,000 nuclear warheads that were once aimed at the United States.

As former Chairman of the Agriculture Committee, Senator Lugar built bipartisan support for 1996 federal farm program reforms, ending 1930s 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.

Senator Lugar has received numerous awards including Guardian of Small Business, the Spirit of Enterprise, Watchdog of the Treasury, and 36 honorary doctorate degrees. 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.

Ambassador Vladimir P. Lukin



Ambassador Vladimir P. Lukin is a former Russian ambassador to the U.S. and served as Deputy Chairman of the Russian Duma. He previously served as Chairman of the Duma's Foreign Affairs Committee. In February 2004, Mr. Lukin was appointed by the State Duma to the post of Commissioner on

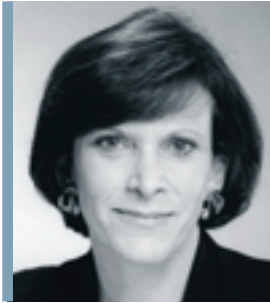
Human Rights in the Russian Federation.

Born in the Siberian city of Omsk, Ambassador Lukin is a specialist in U.S. Soviet/Russian strategic arms control issues. He is a graduate of the Moscow Pedagogical Institute and received his PhD in history from the Institute of World Economy and International Relations of the USSR Academy of Sciences.

Ambassador Lukin was a member of the Editorial Board of the international journal *World Review* in Prague but was recalled to the USSR in 1968 for protesting the Soviet invasion of Czechoslovakia. From 1969 to 1987, Ambassador Lukin was a Research Fellow at the Institute of U.S. and Canadian Studies of the USSR Academy of Sciences. He then served in the USSR Foreign Ministry as Deputy Head of the Foreign Policy Analysis and Prognosis Department until 1990, when he was elected as a People's Deputy of the Supreme Soviet of the Russian Socialist Federal Soviet Republic. There he served as Chairman of the Supreme Soviet Committee on International Affairs and Foreign Economic Relations.

Ambassador Lukin is the author of books and numerous articles on international relations and Russian foreign policy. He speaks French, Spanish and English and is married, with two sons.

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 and Moscow. Dr. Mathews, who holds a Ph.D. 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 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.

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 Waseda University Graduate School in Japan.

One of his country's most respected diplomats, Judge Owada previously served as Vice Minister for Foreign Affairs, 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 member of the Institut de Droit International. Judge Owada is the author of numerous writings on international, legal and political affairs.

Dr. William J. Perry



Dr. William J. Perry currently serves as the Michael and Barbara Berberian Professor at Stanford University, with a joint appointment in the School of Engineering and the Institute for International Studies. He is also a Senior Fellow at the Hoover Institute and Co-Director of the Preventive

Defense Project, a research collaboration of Stanford and Harvard Universities.

Dr. Perry was the 19th Secretary of Defense for the United States, serving from February 1994 to January 1997. As Secretary of Defense, he was instrumental in implementing and strengthening the Nunn-Lugar Cooperative Threat Reduction Program. He also served as Deputy Secretary of Defense (1993–1994) and Under Deputy Secretary of Defense for Research and Engineering (1977–1981).

Dr. Perry has extensive business experience and currently serves on the board of several high-tech companies and is Chairman of Global Technology Partners. He is a member of the National Academy of Engineering and a Fellow of the American Academy of Arts and Sciences.

Dr. Perry has received numerous awards and decorations from U.S. and foreign governments, non-governmental organizations and the military, including the Presidential Medal of Freedom in 1997.

Dr. Nafis Sadik



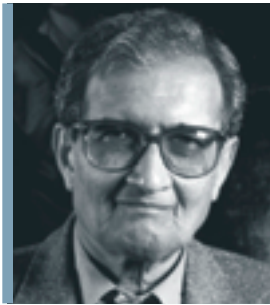
Dr. Nafis Sadik has consistently called attention to the importance of addressing the needs of women directly in making and carrying out development policy. From 1987 to 2000, Dr. Sadik served as Executive Director of the United Nations Population Fund, with the rank of

Under Secretary General, becoming 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, where she continues to work on gender, population and development issues. Current assignments include Special Envoy for HIV/AIDS in Asia and the Pacific and membership on the High Level Panel on Threats, Challenges and Change.

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 the national family planning program.

Dr. Sadik was educated at Loreto College, Calcutta, India, received her doctor of medicine degree from Dow Medical College, Karachi, and completed further studies at Johns Hopkins University. She is the recipient of numerous international awards and honors for her contributions to 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 economics, 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.

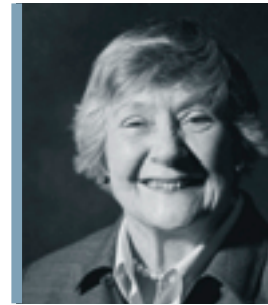
Professor Sen is Lamont University Professor and Professor of Economics and Philosophy at Harvard University, and was until recently the Master of Trinity College, Cambridge. Earlier he was the Drummond Professor of Political Economy at Oxford University and a Fellow of All Souls College. Prior to that 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 fields. His work has ranged over welfare economics, social choice, theory of measurement, development economics, ethics, political analysis, and economics of peace and war. His last two books are *Development As Freedom*, and *Rationality and Freedom*, and his next book, to be published by Penguin Books, is entitled *The Argumentative Indian*.

He has served as President of the Econometric Society, the American Economic Association, and the International Economic Association. He was also Honorary President of OXFAM, and is now its Honorary Advisor.

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 a member of the United Kingdom's House of Lords. She was elected Leader of the Liberal Democrats in the House of Lords in 2001 and served in this position until November 2004. She began her career as a journalist for *The Daily Mirror* and *The Financial*

Times and in 1960 became Secretary of the Fabien 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.

Outside her career in government, Baroness Williams served as Public Service Professor of Elective Politics from 1988 to 2000 at the John F. Kennedy School of Government at Harvard University. She lectured at numerous universities including Princeton University, University of California at Berkeley and Cambridge University. She is a member of the Council on Foreign Relations International Advisory Board and serves on several other boards including the Moscow School of Political Studies and the International Crisis Group.

Baroness Williams holds 11 honorary doctorates from British, Belgian and U.S. universities. She received a BA in philosophy, politics and economics from Somerville College, where she also received an MA, and attended Columbia University on a Fulbright Scholarship.

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 to 1999. He served as Director of the Shanghai Institute of Nuclear Research of the Chinese Academy of Sciences from 1987 to 2001, was Chairman of the Shanghai Science and Technology Association from 1992 to 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, New Jersey; and Tokyo University, Japan.

Professor Yang served as a council member representing China on the Association of East Asia Research Universities and was an executive member both of the International Association of University Presidents and of 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.

Warren E. Buffett Advisor to the Board of Directors



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

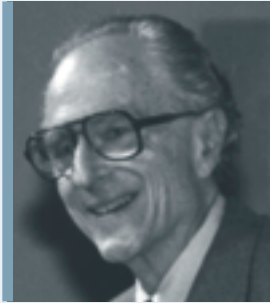
Hathaway Inc., a holding company owning subsidiaries engaged in a number of diverse business activities and controlled by him since 1965. Berkshire Hathaway Inc.'s business activities include the underwriting of property and casualty insurance and a wide variety of manufacturing, retailing and service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

Mr. Buffett started out as an investment salesman and securities analyst, and early in his career, he created his own investment partnership. He rapidly emerged as an innovative businessman with simple but sound investment principles and is now recognized as the world's greatest investor.

Mr. Buffett also serves as a Director of The Coca-Cola Company and The Washington Post Company, and is a Life Trustee of Grinnell College and the Urban Institute.

Known for his superior ability at math and off-the-cuff number crunching, Mr. Buffett attended the Woodrow Wilson High School in Washington, DC, and the Wharton School of Business at the University of Pennsylvania, and in 1950 received his BS from the University of Nebraska. He earned his MS in economics from Columbia University in 1951.

Dr. David A. Hamburg
Advisor to the Board of Directors



David Hamburg is President Emeritus of Carnegie Corporation of New York, after having been President from 1983-97. He received his A.B. (1944) and his M.D. (1947) degrees from Indiana University. He was Professor and Chairman of the Department of

Psychiatry and Behavioral Sciences from 1961-72 and Reed-Hodgson professor of Human Biology at Stanford University from 1972-76; President of the Institute of Medicine, National Academy of Sciences, 1975-80; Director of the Division of Health Policy Research and Education and John D. MacArthur Professor of Health Policy at Harvard University, 1980-83. He served as President then Chairman of the Board of the American Association for the Advancement of Science (1984-86).

Under Dr. Hamburg's leadership, Carnegie Corporation played an active role in reducing nuclear danger, moving toward the resolution of the Cold War, and working toward democracy in South Africa. In 1994, he established the Carnegie Commission on Preventing Conflict, which he co-chaired with Cyrus Vance. The commission published a synthesis of these activities under the title, *Preventing Deadly Conflict*.

He published *No More Killing Fields: Preventing Deadly Conflict* in 2002. He and his wife, Betty, have completed a book published in 2004 by Oxford University Press entitled, *Learning to Live Together: Preventing Hatred and Violence in Child and Adolescent Development*.

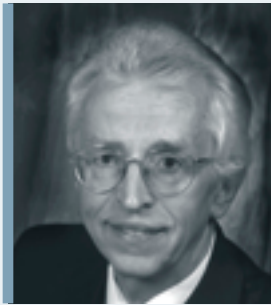
Dr. Joshua Lederberg
Advisor to the Board of Directors



Joshua Lederberg, a research geneticist, is president-emeritus at the Rockefeller University in New York. There, he continues his lifelong research on bacterial genetics, as a Scholar of the Beverly and Raymond Sackler Foundation. He was awarded

the Nobel Prize for Physiology and Medicine in 1958, and the U.S. National Medal of Science in 1989. He serves on the Defense Science Board and the Defense Threat Reduction Agency advisory committee, as well as a range of other governmental, industrial and academic consultantships.

Dr. Siegfried S. Hecker
Advisor to the Board of Directors



Siegfried S. Hecker was Director of Los Alamos National Laboratory from 1986-1997 and is currently a Senior Fellow at the laboratory. He served as Chairman of the Center for Materials Science and Division Leader of the Materials Science and Technology

Division before becoming Director. From 1970 to 1973 he was a senior research metallurgist with the General Motors Research Laboratories.

Dr. Hecker is a member of the National Academy of Engineering, Foreign Member of the Russian Academy of Sciences, Fellow of the TMS (Minerals, Metallurgy and Materials Society), Fellow of the American Society for Metals, Honorary Member of the American Ceramics Society, and Fellow of the American Academy of Arts and Sciences. He is a member of the American Association for the Advancement of Science, Council on Foreign Relations, Tau Beta Pi Honorary Engineering Fraternity, Alpha Sigma Mu Honorary Metallurgical Fraternity, and the Society of Sigma Xi.

In addition to his current research activities in plutonium science and stockpile stewardship, he works closely with the Russian Academy of Sciences and the Russian Ministry of Atomic Energy on a variety of cooperative threat reduction programs. Dr. Hecker is also actively involved with the U.S. National Academies, serving on the Council of the National Academy of Engineering, serving as chair of the newly established Committee on Counterterrorism Challenges for Russia and the United States, and as a member of the National Academies Committee on Nuclear Nonproliferation.

George F. Russell, Jr.
Advisor to the Board of Directors



George F. Russell, Jr. has been a worldwide leader in promoting the critical importance of globalization to reduce poverty and disease throughout the world.

Russell built Frank Russell Company into one of the world's leading investment advisory firms, serving as chairman from 1958 until the firm was sold to Northwestern Mutual Life in 1999. Today, the company guides 1,100 clients in 35 countries with assets exceeding \$1.8 trillion, and manages \$130 billion in funds.

Mr. Russell pioneered the business of pension fund consulting. He is a well-known advocate of diversified global investing and, along with Warren Buffett, was named in 1993 as one of the four most influential people in institutional investing.

Mr. Russell and his wife Jane (until her passing from a 13-month battle with cancer in May 2002) promoted economic development efforts in their hometown of Tacoma, and were active supporters of education, the arts and medical research. Their civic leadership has resulted in many honors. They jointly received the prestigious E. Donnell Thomas "Medal of Achievement" from the Fred Hutchinson Cancer Research Center in 1997, and they were the couple behind the creation of the internationally recognized Museum of Glass in Tacoma.

Mr. Russell is Co-Chairman of the EastWest Institute, Co-Chairman of The Kendall-Russell Centre for Corporate Competitiveness in Russia, Chairman of The National Bureau of Asian Research, Chairman of Transmutation Technologies, Inc., Chairman of The Russell Family Foundation and The Threshold Group, among others, including projects to educate Americans on Islam and the critical importance of globalization.

Officers & Staff

NTI is staffed by a group of experts on international affairs, nonproliferation, security and military issues, public health, medicine and communications. They have held high-level posts in the White House, federal and state agencies, the U.S. military, the U.S. Congress and international organizations. The NTI staff share a common vision of a safer world and are working to reduce the global threats from nuclear, biological and chemical weapons. Here are brief biographies of some NTI staff members:

Sam Nunn, *Co-Chairman & Chief Executive Officer* (see biography in Board of Directors section)

Charles B. Curtis, *President & Chief Operating Officer* (see biography in Board of Directors section)

Joan Rohlfig, *Senior Vice President for Programs & Operations*

Ms. Rohlfig 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. Rohlfig also has served on the staff of the U.S. House of Representatives Armed Services Committee and at the U.S. Department of Defense.

Brooke D. Anderson, *Vice President for Communications*

Ms. Anderson joined NTI after serving in various senior positions in the executive and legislative branches of the U.S. government, including as Special Assistant to the President and Senior Director for Communications at the National Security Council at the White House. She also served as Director of the U.S. Department of Energy's Office of Public Affairs and Deputy Chief of Staff and Press Secretary to former Congressman David Skaggs.

Margaret A. Hamburg, M.D., *Vice President for NTI's Global Public Health and Security Initiative*

Before coming to NTI, Dr. Hamburg was Assistant Secretary for Planning and Evaluation at the U.S. Department of Health and Human Services. She is a physician and expert in public health and bioterrorism. Dr. Hamburg was the Commissioner of Health for the City of New York and former Assistant Director of the Institute of Allergy & Infectious Diseases at the National Institutes of Health. She is a member of the Institute of Medicine of the National Academies of Science, the Intelligence Science Board, the Council on Foreign Relations, the Aspen Study Group and a fellow for the American Association of the Advancement of Science.

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, the International Institute of Strategic Studies and the Executive Board of Women in International Security.

Tony Kalm, *Vice President for Development*
Mr. Kalm has held senior-level development positions with a number of nonprofit organizations and consulted internationally in that sector. His experience includes developing and implementing major fund-raising programs and securing the support of international organizations, governments and major donors in the United States and abroad. He has raised over \$100 million and brought significant media and public attention to bear on health, humanitarian and conservation issues. Mr. Kalm was a Peace Corps volunteer in Sri Lanka and has worked in Italy and South Africa.

Sonya Vekstein, *CPA, Chief Financial Officer*

Before coming to NTI, Sonya Vekstein was Chief Financial Officer at the International Republican Institute, a non-profit organization promoting democracy worldwide, where she worked to improve accounting processes and internal controls. Ms. Vekstein is a Certified Public Accountant and a member of the American Institute of Certified Public Accountants.

Robert E. Berls, Jr., Ph.D., *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 first 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.

Lisa K. Cutler, *Director of Programs and Outreach, Communications Program*

Prior to joining NTI, Ms. Cutler directed external communications for the U.S. National Nuclear Security Administration. She has also held senior communications positions at the U.S. Department of Energy and the U.S. Department of Labor and was Press Secretary to former U.S. Senators John Glenn and Harris Wofford.

Catherine O'Brien Gwin, *Director of Communications*

Ms. Gwin comes 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.

Diane G. Hauslein, *Director of Administrative Operations*

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.

Tatiana G. Nikolenko, *Program Manager, Biological Programs in Russia, Moscow Office*

Prior to joining NTI, Ms. Nikolenko worked as a senior project manager at the International Science and Technology Center headquarters, where she ran the Russian/NIS biological programs and served as coordinator for U.S. public health programs in Russia and the NIS. Ms. Nikolenko received her degree in biomechanics from Moscow State University. She has authored three books.

Major Robert E. Schultz, USAF (Ret.), *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."

Mark Smolinski, M.D., M.P.H., *Senior Program Officer, Biological Programs*

Before coming to NTI, Dr. Smolinski was a Senior Program Officer at the Institute of Medicine of the National Academies of Science and Study Director for Microbial Threats to Health: Emergence, Detection, and Response. He is a physician and expert in medical epidemiology and public health. Dr. Smolinski has served in various senior positions in the federal, state and local governments, including Senior Advisor to the U.S. Assistant Secretary for Health and Surgeon General, and was an epidemic intelligence officer for the U.S. Centers for Disease Control and Prevention.

Claire Delahaye-Rhye,

Development Associate

Ms. Delahaye-Rhye came to NTI after working as an English instructor in Seoul, South Korea. While at NTI she has worked toward the completion of a master's degree in International Commerce and Policy from the George Mason University School of Public Policy. Ms. Delahaye-Rhye has a bachelor of arts in anthropology from the University of Iowa.

Kirsten Houghton, *Program Associate,*

Biological Programs

Ms. Houghton joined NTI four years ago after managing a private art collection in New York. While working at NTI, Ms. Houghton earned a master's degree in International Peace and Conflict Resolution at the School of International Service of American University. Ms. Houghton has a bachelor of arts in french and art history from Dickinson College and is a member of Women in International Security.

Jaime M. Yassif, *Program Officer*

Ms. Yassif came to NTI from the Federation of American Scientists (FAS), where she worked as a research assistant, contributing to the research and writing of congressional testimony on radiological weapons as well as an FAS report on threat reduction programs in Russia. She also participated in projects on U.S. nuclear force structure, uranium enrichment technology and biosecurity. Ms. Yassif has a degree in biology from Swarthmore College and is a member of Women in International Security.

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“The WHO Global Outbreak Response Fund supported by NTI has helped our group react immediately to the Tsunami disaster—moving staff to the regional office as forward deployment to the most affected areas—Sri Lanka and Aceh. As a result of the fund, 100+ experts are on standby to respond to any outbreak, and to support WHO and affected countries with technical advice rapidly. I’ve said it before but it is worth saying again. The fact we have the Response Fund is a godsend.”

Pat Drury, M.D.,
Project Manager
Global Outbreak Alert and Response Network
Communicable Disease Surveillance and Response
World Health Organization

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NTI is governed by an experienced leadership team, led by Sam Nunn, retired U.S. Senator and former Chairman of the U.S. Senate Armed Services Committee. The Board of Directors brings together distinguished leaders with diverse experience and perspectives who are united around NTI’s mission of taking immediate action to reduce the global threats from nuclear, biological and chemical weapons. NTI is staffed by experts with operational experience in international affairs, nonproliferation, security issues, public health, medicine and communications.

NTI combines its influential voice with direct action projects to leverage greater action by governments and other organizations.

“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
Berkshire Hathaway Inc.
Advisor to NTI’s Board of Directors

NTI was “critical to and a major factor in bringing this important non-proliferation deal to closure.”

U.S. Deputy Secretary of State Richard Armitage regarding Project Vinca, where NTI helped to finance the removal of 2.5 bombs worth of vulnerable nuclear material from a poorly protected reactor in Belgrade. The success of Project Vinca led to a commitment by the U.S. government to clean out and secure vulnerable bomb material from research reactors around the world.

“NTI is an essential investment if we want to keep al Qaeda from getting their hands on nuclear, chemical and/or biological weapons they would use to destroy us! NTI has been uniquely successful in leveraging resources to reduce these risks. I am proud to offer support and invite many more to join in supporting NTI!”

George Russell
Chairman Emeritus,
Russell Investment Group

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