



# A Year Like No Other

2020 Annual Report

NUCLEAR THREAT INITIATIVE





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# Letter from the NTI Co-Chairs

Ernest J. Moniz, Sam Nunn, and Ted Turner

**By the time the glittering New Year's Eve ball dropped in an all-but empty Times Square to usher out 2020, close to 350,000 Americans had died from the new coronavirus and the global death count exceeded 1.7 million. Economies were reeling, and millions were unemployed; hospitals were overwhelmed, and new, even more contagious strains of the disease that spanned the globe were beginning to spread.**

In 2020, COVID-19 proved that catastrophic threats are neither abstract nor unlikely. The unthinkable can happen—and the devastation is compounded if we're unprepared.

While the world's attention rightfully was focused on the pandemic, 2020 also marked the 75<sup>th</sup> anniversary of the first and only use of nuclear weapons. Through a mix of diligence, grace, and good luck, there has not been a nuclear catastrophe since 1945.

That fact is cold comfort at a time of growing nuclear threats: increased tensions between nuclear-armed states, a frayed arms-control framework, terrorist dangers, nuclear advances in Iran and North Korea, cyber threats, and more.

Today, we know the unthinkable also is possible in the form of a nuclear detonation at the hands of the leader of a nuclear-armed state or by a terrorist organization, or as the result of an accident or terrible miscalculation.

Despite this challenging backdrop, as we write this letter in early 2021, there is reason for hope. The early roll-out of COVID-19 vaccines in the United States and around the world has been uneven, at best, but the pace is accelerating, and we are hopeful that by summer, we can all breathe easier. With the election of Joe Biden, we also expect to see global nuclear security rise as a priority. In just his first week in office, President Biden reached agreement with Russia to renew the world's last remaining arms control treaty before it expired—a good first step.

For the two decades since our founding in 2001, developing innovative, workable solutions to reduce global nuclear and biological threats has been at the core of NTI's mission. As we prepare to celebrate our 20th anniversary in 2021, we can look back with pride that in 2020, we were able to make important contributions on both fronts—and we look forward to productive cooperation with the new administration in Washington as we move ahead.

COVID-19 and the U.S. presidential election dominated the news in 2020.

Our NTI | bio team, in partnership with the Johns Hopkins Center for Health Security and the Economist Intelligence Unit, warned that the world was unprepared for a pandemic in the inaugural edition of the groundbreaking Global Health Security (GHS) Index in 2019, released just months before COVID-19 made headlines. Tragically, the United States has suffered 20 percent of the global pandemic-related deaths, despite having the Index's highest rating in the context of alarming overall global unpreparedness. This sad outcome in our country shows the crucial importance of effective and coordinated leadership at every level, a clear plan to implement health measures that follow the science, and a prompt response to crisis. In sum, having a good toolbox does not ensure effective use of those tools.



Drawing on the work behind the GHS Index and their decades of experience in biosecurity, the NTI | bio team and our partners moved fast when the pandemic hit to help inform local government response plans and work closely with global institutions to lay a stronger foundation to prevent and respond to future biological threats.

You'll read more about NTI | bio's work in these pages, and we're pleased to report that the feedback has been tremendous. Mayor Jenny Durkan of hard-hit Seattle said our COVID-19 Frontline Guide, which included metrics for response and reopening, helped "local leaders make effective, strategic, and informed decisions to slow the spread of COVID-19" in their communities. We also were honored when Warren Buffett commended our work on biosecurity and held up a copy of our GHS Index at his Berkshire Hathaway Annual Shareholders Meeting in May.

Our work to get ahead of future threats continued through 2020. NTI convened senior leaders from around the world at the Munich Security Conference in February for a scenario-based tabletop exercise designed to identify gaps in global capacities to prevent and respond to high-consequence biological events. We partnered with the World Economic Forum to address the risks associated with advances in biotechnology, including DNA synthesis. And we worked with African health authorities, the U.S. Department of Defense, and the U.S. Centers for Disease Control and Prevention (CDC), to train hundreds of experts from dozens of African countries.

Recognizing that nuclear security issues are ignored or get short shrift in election years, we brought the issues to voters and candidates for the White House and Congress in 2020 through public events in multiple primary states,

the news media, social media, and online resources. Building on our work to engage younger generations, we also launched a dramatic new mobile game, *Hair Trigger*. We encourage you to give it a try!

This report also highlights our nuclear and radiological security work in 2020. We released the fifth edition of our NTI Nuclear Security Index, an indispensable resource for governments, international organizations, and industry on the important steps needed to protect vulnerable nuclear materials and facilities from potentially catastrophic terrorism. The NTI Index assesses nuclear security conditions across 176 countries, and in 2020, it found that progress slowed significantly, due to lack of high-level attention and ongoing major security gaps.

For the first time, the NTI Index included an assessment of radioactive source security, which demonstrated that the international architecture for radiological security is extremely weak. Thousands of radioactive sources remain vulnerable to theft from hospitals, university labs, and industrial sites where they are used for a variety of beneficial purposes.

We're looking to reverse these trends in 2021 and beyond.

Our Science and Technology program also engaged in some exciting new work in 2020. One project explored the risks associated with increased digitization and automation as part of a major nuclear modernization program underway in the United States. The team issued important recommendations on assessing and mitigating the cyber risks now—before the new systems are integrated into some of the deadliest weapons on earth. Another project, in partnership with the Center for Advanced Defense Studies, uncovered new ways to

track the digital “footprints” left by those engaged in high-risk, illicit trade in nuclear materials, equipment, and technologies. This is fascinating and important work.

Today's new reality pushed us to become more adaptive and innovative than ever before as we did our work in 2020. A number of events, including the horrifying killing of George Floyd, also prompted us to look inward this year at what more NTI can do to address diversity, equity, and inclusion—and we are committed to continuing to make progress on this front. We have turned to partners like Gender Champions in Nuclear Policy, Women of Color Advancing Peace and Security, and Out in National Security to assess our work and learn what more we can do to improve our field.

We would like to thank our exceptional staff, our dedicated Board members, and the foundations, families, and individuals who put their trust in NTI. Without them, we would not be able to do our important work.

We are tremendously grateful to both our new funders and generous supporters, particularly Warren Buffett, John Hess, Ray Rothrock, the Carnegie Corporation of New York, the John D. and Catherine T. MacArthur Foundation, the Open Philanthropy Project, and the Peter G. Peterson Foundation.

As we look ahead, we know that the global environment for our work is daunting—but we are proud of the important contributions we made in 2020, and we look forward to making further progress as the world emerges from the terrible pandemic.

At NTI, we believe that we are making a real difference in reducing nuclear and biological threats, and we hope you will join us in this important work.



Ernest J. Moniz



Sam Nunn



Ted Turner

Protests erupted in Washington, D.C., across the United States, and around the world following the horrifying killing of George Floyd in May.



# NTI's Commitment to Diversity, Equity, and Inclusion

Amid the chaos related to the pandemic and drama around the presidential campaign, the Black Lives Matter protests brought into sharp relief the need for greater diversity, equity, and inclusion (DEI) at NTI, across the national security field, and around the nation. NTI embraced the opportunity to increase our focus in this area.

In May, following the horrific killing of George Floyd in Minneapolis, we issued a statement calling for all Americans to “raise our voices to demand an end to the bigotry that infects our legal system, to the economic inequities that disproportionately affect African Americans, and to the discrimination and intolerance that poisons our communities.”

NTI leadership had already launched a DEI task force earlier in 2020 with representation from across the organization. Fueled by the national call for action, members helped prioritize next steps, which immediately began to be implemented: listening sessions for NTI staff; workshops, discussions, and training on DEI-relevant issues; a stronger focus on diversity when hiring staff and interns, including through new partnerships with Historically Black Colleges and Universities and Women of Color Advancing Peace and Security; hosting webinars focused on diversity and the importance of mentorship in our field, and more.



*In June, NTI co-hosted a webinar with Gender Champions in Nuclear Security, Women of Color Advancing Peace and Security, and Out in National Security focused on the importance of diversity in the field of nuclear security.*

NTI had already been working to break down gender barriers. Both Ernie Moniz and Joan Rohlfing became Gender Champions in Nuclear Policy in 2018, committing to sustain or enhance gender diversity among our leadership team and staff, Board of Directors, and symposia and seminar presenters; update NTI policies and procedures to ensure they promote gender equality

within the workforce; and conduct annual training focused on respect for diversity within the workplace.

Women in International Security recognized NTI's progress in its 2020 Gender Scorecard, finding that out of the 10 nonprofit organizations focused on nuclear arms control and disarmament, only NTI had achieved gender parity among our experts.

While we are proud of NTI's longstanding commitment to gender diversity, we understand that building a more diverse, equitable, and inclusive community will take time and a sustained commitment. We also know that the work starts at home. We look forward to reporting on NTI's efforts in this arena in the future.



“Urbanization, political instability, and climate change all are contributing to growing biological risks.”



# Enhancing Global Biosecurity

With more than 85 million cases worldwide and a death toll approaching 2 million by the end of 2020, COVID-19 confirmed that biological threats—whether natural, intentional, or accidental—have the potential to kill many millions of people, cost trillions in economic losses, and exacerbate political and economic instability. As the ongoing pandemic has made clear, the risk of a catastrophic biological event is magnified by a rapidly changing and interconnected world. Urbanization, political instability, and climate change all contribute to growing biological risks. Moreover, rapid technology advances make it easier, cheaper, and faster than ever before to create and engineer pathogens.

NTI | bio has been at the forefront of COVID-19 response efforts and work to prevent the next pandemic—or worse, a global catastrophic biological event of even greater proportions. We uncover weaknesses in global preparedness and response capabilities, we identify and share solutions to address immediate crises as well as new and evolving biological risks, and we work to ensure that biosecurity is elevated to a global priority now and for the longer term.

## Fighting the Pandemic

### Global Health Security Index

Just a few months before reports of the first COVID-19 cases emerged in the press, NTI | bio, in partnership with the Johns Hopkins Center for Health Security and working with the Economist Intelligence Unit, released the inaugural edition of the Global Health Security (GHS) Index. The index is the first comprehensive assessment and benchmarking of health security and related capabilities across 196 countries. The first edition was strikingly prescient: it warned that national health security is fundamentally weak around the world, and no country is fully prepared for epidemics or pandemics.

COVID-19 has borne that out, revealing fundamental weaknesses in prevention and preparedness even in some of the world's wealthiest and most advanced countries. This includes the United States, which has failed to effectively manage response to the pandemic, despite ranking first in the GHS Index.

Throughout 2020, the GHS Index has served as a guide for governments, international health organizations, health policy officials and experts, and the news media. NTI | bio and our partners are working on the second edition now, adding metrics that reflect new insights gleaned from the pandemic. We expect to release the second edition of the GHS Index in 2021.

### Guiding the COVID-19 Response Across the United States

In the early months of the COVID-19 pandemic, local governments were desperate for information on how best to suppress the virus in their communities. In the absence of a robust federal response, NTI | bio worked with top global health



experts to produce over the course of just a few weeks, the COVID-19 Frontline Guide, an online tool to help local leaders prioritize response and establish effective strategies to reduce transmission and maintain economic stability. The tool includes a self-assessment, key actions for progress, and metrics to guide decisions.

The guide, part of the COVID-Local.org website, was a joint project with the Center for Global Development and the Georgetown University Center for Global Health Science and Security, in collaboration with Talus Analytics. "As local leaders, our ongoing public health response to COVID-19 and re-opening our economy are inextricably linked," Seattle Mayor Jenny Durkan said in May. "COVID-Local's step-by-step framework and metrics for phased re-opening help local leaders make effective, strategic, and informed decisions to slow the spread of COVID-19 and begin to re-open businesses to a new normal."

## Educating Leaders and the Public about the Pandemic



From the start of the COVID-19 pandemic, the news media was thirsty for information and turned to NTI for clarity and recommendations during a time of great confusion. Beth Cameron, vice president for Global Biological Policy and Programs, was in particularly high demand after she wrote an op-ed for the *Washington Post* describing her work at the White House National Security Directorate for Global Health Security and Biodefense, an office that the Trump Administration disbanded.

Cameron and members of her team, as well as NTI Board member Dr. Margaret A. Hamburg, the former Food and Drug Administration commissioner and widely respected global health expert, authored numerous op-eds and blog posts and appeared on scores of TV and radio programs

and podcasts. Before the end of March, Cameron alone had appeared on MSNBC's *Morning Joe* and *The Rachel Maddow Show*, *Bloomberg TV*, CNN's *New Day*, NPR's *All Things Considered*, and veteran journalist Katie Couric's podcast, just to name a few.

A high point of the recognition for NTI | bio came in May when Warren Buffett, at his Berkshire Hathaway Annual Shareholders Meeting, held up a copy of the GHS Index and commended NTI's work. Buffett, a longtime NTI supporter, had been briefed by Ernie Moniz, Sam Nunn, and Cameron when the index was released in late 2019. "It's hard to think about things that haven't happened," Buffett said of NTI's work to reduce global catastrophic risks. But, "you're going to get bolts from the blue."

In early 2021, Hamburg generously agreed to serve as interim vice president of NTI | bio when Cameron was tapped to join the White House to rebuild the National Security Council's Office of Global Health Security and Biodefense.

### By the Numbers

## RESPONDING TO COVID-19

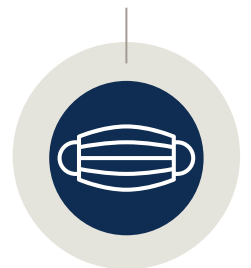


26,000

PANDEMIC RESPONSE POLICIES ASSESSED BY COVID-LOCAL.ORG, COVERING ALL 50 STATES, 29 TRIBAL JURISDICTIONS, HUNDREDS OF U.S. COUNTIES, AND 68 COUNTRIES.

7

KEY OBJECTIVES FOR COMMUNITY PANDEMIC RESPONSE INCLUDED IN THE COVID-19 FRONTLINE GUIDE FOR LOCAL DECISIONMAKERS.



142

NUMBER OF TIMES THE GLOBAL HEALTH SECURITY INDEX WAS MENTIONED IN THE NEWS MEDIA IN RELATION TO THE PANDEMIC.



“Covid-Local’s step-by-step framework and metrics help leaders make effective, strategic, and informed decisions to slow the spread of COVID-19 and begin to reopen businesses to a new normal.”

Seattle Mayor Jenny Durkan



## Moniz Calls World Leaders to Action at Davos

Following the release in January of a report co-authored by NTI and the World Economic Forum (WEF), *Biosecurity Innovation and Risk Reduction: A Global Framework for Accessible, Safe and Secure DNA Synthesis*, Ernie Moniz traveled to the WEF meeting in Davos, Switzerland, to call on global leaders to work urgently to reduce biological risks associated with advances in technology.

“When it comes to rapid advances in biotechnology, there is a double-edged sword,” Moniz wrote in the foreword to the report. He continued:

New innovations hold the promise of a future that is more resilient to disease, food insecurity and environmental instability, and there is no doubt that advances in genomics, synthetic biology and microbiology will continue to prove essential for a safer, healthier, and more secure future for all.

At the same time, advances in technology, including cheaper DNA synthesis and widespread access to gene editing tools, have made it possible for a broader array of actors to manipulate biological agents and systems. Together, the innovations and access portend an increase in the risk of a potentially catastrophic biological event, whether deliberate or accidental.

At Davos, during a session with Jason Kelly, the CEO of the synthetic biology company Ginkgo Bioworks, Moniz asked public and private sector leaders to join NTI in developing an international approach to prevent the illicit synthesis of dangerous biological agents and launch a global organization to identify and reduce biotechnology-related risks. Work on that project continues into 2021.



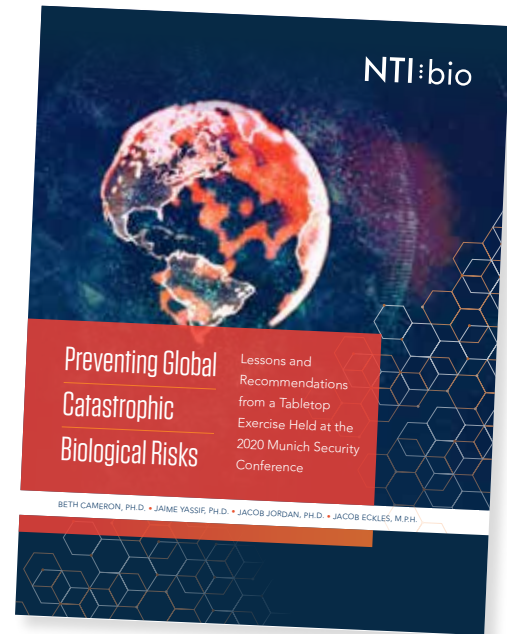
# Preventing the Next Biological Catastrophe

## Pre-COVID-19 Tabletop Exercise Reveals Gaps in Global Biosecurity

In 2020, shortly before the COVID-19 pandemic made headlines and effectively shut down global travel, NTI convened senior leaders from around the world at the Munich Security Conference for a scenario-based tabletop exercise designed to identify gaps in global capacities to prevent and respond to high-consequence biological events.

The scenario had world leaders and health experts grappling with an unexplained influenza virus that was killing international travelers from fictional Aplea, a middle-income country with a burgeoning bioscience and biotechnology economy. Although the exercise was developed in 2019 and involved a laboratory-engineered virus, “the fictional disease in the scenario swept the globe in a way eerily similar to COVID-19 and foreshadowed the widespread impact and paralyzing knock-on effects that the world is now experiencing,” Ernie Moniz wrote in the foreword to the resulting report. “While the real-life novel agent—SARS-CoV-2—emerged from nature, the next pandemic threat could be caused by a laboratory accident or deliberate misuse, arising at any time.”

*Preventing Global Catastrophic Biological Risks: A Tabletop Exercise at the 2020 Munich Security Conference*, released in September, offers findings and recommendations for preventing, deterring, and responding to the development of biological weapons. We launched the report on the margins of the 2020 UN General Assembly, and guest speakers included Elhadj As Sy, co-chair of the Global Preparedness Monitoring Board, who emphasized the importance of preparing for catastrophic events. Emily Leproust, CEO of Twist Bioscience, also joined us and highlighted the role that industry can take to reduce emerging biological risks associated with technology advances.



## Biosecurity and Biosafety Training in Africa

Partnering with the Africa Centres for Disease Control and Prevention (Africa CDC) with the goal of reducing accidental and deliberate biological risks, including those associated with COVID-19, NTI | bio sponsored a series of trainings in 2020 that drew hundreds of experts from dozens of countries across eastern, western, and southern Africa. Training focused on immediate actions countries could take, such as proper sample handling, storage, and transport of COVID-19 material; disinfection and decontamination best practices; proper personal protection equipment use; and biosecurity considerations, including physical security, personnel reliability, and material control and accountability. In addition to Africa CDC, the workshop series is a collaboration among the African Union, the West African Health Organization, the U.S. Centers for Disease Control and Prevention, and the Defense Threat Reduction Agency at the U.S. Department of Defense.

*The University of Washington's Research and Training Building at Harborview Medical Center was closed in May 2019 when the cesium-137 source in a blood irradiator was accidentally breached as it was being removed through the government's Cesium Irradiator Replacement Project. Thirteen people and all seven floors of the building were contaminated by the radioactive source, and ongoing cleanup costs are expected to come in at approximately \$60 million.*



# Addressing Nuclear Terrorism

Strengthening global nuclear and radiological security is key to preventing an attack by a terrorist organization with the money and know-how to build a nuclear weapon or a radiation-spewing “dirty bomb”—or to launch a cyber attack on a nuclear facility. That’s why NTI works closely with governments to better secure vulnerable nuclear materials or eliminate them where possible. And we work with hospitals and industry to replace radiological sources that could be stolen, and with cyber experts to prevent hackers from infiltrating nuclear plants and weapons systems.

## 2020 NTI Nuclear Security Index

The *NTI Nuclear Security Index* is the premier public resource for assessing nuclear security conditions across 176 countries. It has become an indispensable resource for governments, international organizations, and industry on the important steps needed to protect vulnerable nuclear materials and facilities from potentially catastrophic terrorism. Findings from the fifth edition, released in 2020, are alarming: Reversing a trend of substantial improvements between 2012 and 2018 and at a time of growing global disorder and disruption, progress on protecting nuclear materials against theft and nuclear facilities against acts of sabotage has slowed significantly, due to lack of high-level attention and ongoing, major security gaps.

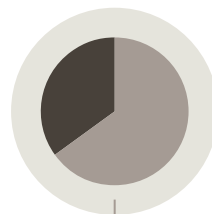
The results show that without the driving force of the Nuclear Security Summits—biennial meetings that brought world leaders together from 2010 to 2016—or similar high-level international events, attention to nuclear security has waned. This comes at a time when terrorist capabilities and growing cyber threats contribute to a more complicated and unpredictable environment. As Ernie Moniz said when the 2020 NTI Index was released, “Given the challenging backdrop for the sharp decline in progress, it is more important than ever to identify shortfalls and call for governments, industry, and the international community to once again step up their efforts to prevent a catastrophic attack using stolen nuclear materials or an act of sabotage that could further shake global foundations.”

## By the Numbers

### NTI INDEX FINDS GAPS

2

ONLY ROMANIA AND TAIWAN RECEIVED A FULL SCORE FOR CYBERSECURITY IN THE CATEGORY OF COUNTRIES WITH NUCLEAR MATERIALS AND/OR FACILITIES.



35%

ONLY ABOUT 1/3 OF COUNTRIES REQUIRE ROBUST PERSONNEL VETTING THAT INCLUDES DRUG TESTS, BACKGROUND CHECKS, AND PSYCHOLOGICAL TESTS FOR PEOPLE WHO WORK AT NUCLEAR FACILITIES, AFFECTING INSIDER THREAT PREVENTION. **AN ALARMING 20% DO NOT REQUIRE ANY OF THESE TESTS.**

22

NUMBER OF COUNTRIES WITH WEAPONS-USABLE NUCLEAR MATERIALS, DOWN FROM 32 IN 2012.



NTI briefed senior government officials in the United States and other countries on the findings of the 2020 NTI Index, and several countries trumpeted their scores in the media. Officials have used the Index both to advocate for nuclear security improvements within their own countries and to guide cooperative programs with other countries.

In addition, NTI's Global Dialogue on Nuclear Security Priorities, now in its ninth year, continued meetings in 2020—in Vienna, Austria, in February, and then virtually in November. The high-level international dialogue draws government officials, experts, nuclear security practitioners, and other stakeholders who work together to develop and promote the necessary elements of a sustainable, comprehensive global nuclear security architecture.

## Preventing a Dirty Bomb: New Assessment of Radiological Security

To build a dirty bomb, terrorists would need a radiological source, such as those used to power batteries and industrial gauges or those in hospital blood irradiators, and a conventional explosive that would spread radioactive particles over a wide area. These sources are far too vulnerable to theft and, in many cases, can be replaced with equally effective, alternative technologies. For several years, NTI has worked with hospitals and research centers, industry groups, and governments to do just that in cities across the United States, in the United Kingdom, and in Central Asia.

In 2020, NTI released a first-of-its-kind assessment of the security of radiological sources in 176 countries, in conjunction with the NTI Index. Unlike the Index, the *Radiological Source Security Assessment* does not rank or score countries; rather, it evaluates national policies, commitments, and actions taken to prevent the theft of these often-vulnerable sources. The key finding: the international architecture for radiological security is extremely weak, and thousands of radioactive sources worldwide remain vulnerable to theft.

## NTI Experts at ICONS 2020

NTI Vice President Laura S.H. Holgate led a team of NTI experts to Vienna, Austria, in February to engage partners at the third International Conference on Nuclear Security (ICONS). Hosted by the International Atomic Energy Agency (IAEA), the conference draws government ministers and high-level experts from civil society, academia, and industry to highlight priorities and exchange ideas on improving nuclear and radiological security. Through presentations, panel discussions, side events, and more, NTI experts addressed civil society engagement on nuclear security, case studies for preventing a dirty bomb, strengthening an international agreement on the physical protection of nuclear materials during transport, recommendations for enhancing cybersecurity at nuclear facilities, and trends in nuclear material management, among other issues.

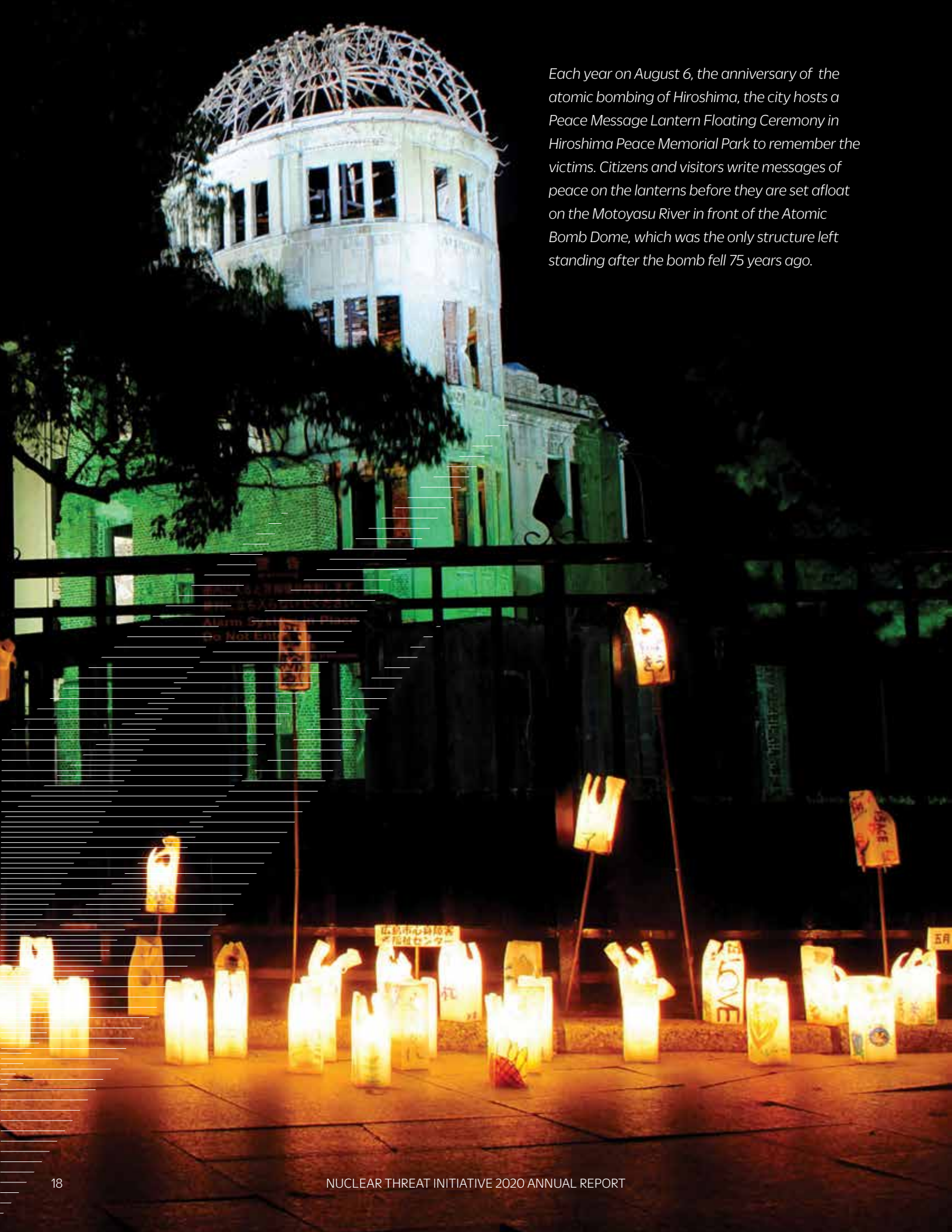




## Voices of Nuclear Security

A radiation protection officer in Kenya. A cyber security expert in South Korea. A nuclear operator in the United States. A doctoral student in Indonesia. These are among the people highlighted by NTI in “Voices of Nuclear Security,” a visual storytelling project that shares the perspectives of nuclear security professionals around the world as part of a broader effort to increase support for national-level nuclear security work, increase awareness of diversity in the field, and attract new talent to careers in nuclear security. NTI launched the project to rave reviews with 15 life-sized posters at the ICONS 2020 conference in Vienna. After the pandemic shut down plans to take the project to additional conferences and events throughout 2020, NTI took it online, interviewing 25 nuclear security practitioners from 11 countries, then featured their stories on Facebook (Voices of Nuclear Security) and Instagram (@NuclearVoices).





Each year on August 6, the anniversary of the atomic bombing of Hiroshima, the city hosts a Peace Message Lantern Floating Ceremony in Hiroshima Peace Memorial Park to remember the victims. Citizens and visitors write messages of peace on the lanterns before they are set afloat on the Motoyasu River in front of the Atomic Bomb Dome, which was the only structure left standing after the bomb fell 75 years ago.

# Preventing the Use of Nuclear Weapons

In 2020, the world marked the 75th anniversary of the only use of nuclear weapons. That three-quarters of a century has passed without another nuclear detonation—even as the number of countries with nuclear weapons, materials, and technology has grown—can be attributed to a remarkable mix of diligence and diplomacy, grace, and good luck. Today, however, as memories of the nerve-racking U.S.-Soviet nuclear arms race fade, we must awaken the world to a new and terrible truth: Nearly 30 years after the Cold War, the risk of a nuclear weapon being used is higher than it has been in decades. In a year that also marked the 50th anniversary of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), disarmament efforts stalled, relations with Russia deteriorated further, North Korea and Iran advanced their nuclear programs, and terrorist and cyber risks continued to evolve and escalate.

Against this challenging backdrop, NTI worked in 2020 to develop and advance innovative, practical ideas, policies, and solutions to reduce reliance on nuclear weapons and take concrete steps to reduce nuclear threats.

## Preserving the U.S.-Russia Arms-Control Treaty

With the February 2021 expiration of the New START treaty looming, NTI worked across a host of fronts in 2020 to promote a five-year extension of the sole remaining arms-control treaty limiting U.S. and Russian nuclear weapons. NTI maintained a steady drumbeat of this message in 2020. We asked candidates and the public to support the New Strategic Arms Reduction Treaty (New START) extension throughout NTI's Safer World 2020 campaign during the presidential election cycle, communicated with senior Trump Administration officials and members of Congress, prepared a nuclear policy priorities paper for the incoming Biden Administration, hosted seminars for expert and public audiences, provided testimony on Capitol Hill, spoke to the media, participated in webinars, and more.

- In February, former California Governor Jerry Brown, an NTI Board member, joined Ernie Moniz and NTI Vice President Corey Hinderstein at an event in California where they spoke to an audience of students—and a Hiroshima survivor—about nuclear dangers and New START.
- In May, Brown and former Secretary of Defense William J. Perry, a founding NTI Board member, spoke about the importance of extending New START during a Commonwealth Club event.
- In June, NTI hosted retired General Frank Klotz, who discussed “The Military Case for Extending the New START Agreement.”

- NTI Vice President Lynn Rusten spoke out about New START extension at a briefing sponsored by the Deep Cuts Commission and during a meeting of the Luxembourg Forum organized by NTI Board member Alexey Arbatov.
- In October, Sam Nunn joined a webinar titled, "New START: Catholic-Evangelical Dialogue on Nuclear Disarmament," hosted by the University of Notre Dame's Keough School of Global Affairs and the Kroc Institute for International Peace Studies. Also in October, Rusten joined a panel discussion organized by the Kennan Institute.

President Biden extended New START for the full five years in early 2021.

NTI also weighed in as the United States planned to withdraw from the Open Skies Treaty in May 2020, a decision that Moniz and Nunn warned would be another in a series of blows to the global arms-control architecture.

## Advancing Nuclear Disarmament Verification



The International Partnership for Nuclear Disarmament Verification (IPNDV), NTI's public-private partnership with the U.S. State Department and nearly 30 countries, entered the third phase of its work aimed at developing the expertise and know-how for verification of future arms-control treaties.

The Partnership had moved from "paper to practice" with multiple technical demonstrations and exercises in 2019 and planned to showcase its work as part of the build-up to the Nuclear Non-Proliferation Treaty Review Conference. With activities postponed due to the pandemic, the educational outreach moved online, through YouTube, Facebook, and Twitter with the release of multiple videos, publications, and a virtual, museum-style exhibit.

### By the Numbers

## GENDER CHAMPIONS COMMIT TO CHANGE

NTI hosts Gender Champions in Nuclear Policy, a leadership network that brings together heads of organizations who are committed to breaking down gender barriers and making gender equity a working reality. In 2020, the group issued its first progress report.



> 50

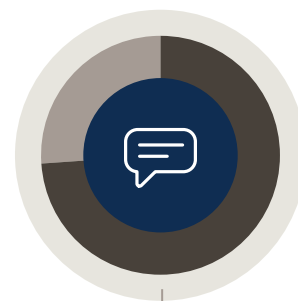
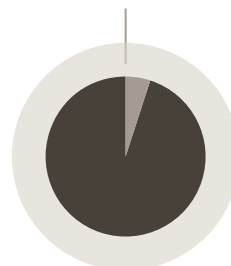
HEADS OF ORGANIZATIONS HAVE BECOME GENDER CHAMPIONS IN NUCLEAR POLICY.

129

SMART (SPECIFIC, MEASURABLE, ATTAINABLE, RELEVANT, AND TIMELY) COMMITMENTS MADE, SUCH AS HOLDING SENSITIVITY TRAININGS AND ENFORCING APPROPRIATE CODES OF CONDUCT.

95%

COMMITMENTS MADE WERE AT LEAST PARTIALLY IMPLEMENTED



74%

UPHELD THEIR COMMITMENT NOT TO SPEAK ON SINGLE-GENDER PANELS.

## Reducing Nuclear Risks in the Euro-Atlantic Region

Noting that decades of strategic stability between the United States, NATO, and Russia has eroded and “clashing national interests, insufficient dialogue, eroding arms control structures, advanced missile systems, and new cyberweapons have destabilized the old equilibrium and are increasing nuclear risks,” the Euro-Atlantic Security Leadership Group (EASLG) in August released a statement calling on leaders of nuclear-armed countries to take two steps to reduce growing risks: Reaffirm the Reagan-Gorbachev principle that “a nuclear war cannot be won and must never be fought” and extend the New START treaty.

Led by Des Browne, Wolfgang Ischinger, Igor Ivanov, Ernie Moniz, and Sam Nunn, with their respective organizations—the European Leadership Network, the Munich Security Conference, the Russian International Affairs Council, and NTI—the EASLG works with former and current officials and experts from a group of Euro-Atlantic states and the European Union to test ideas and develop proposals for improving security in areas of existential common interest. The group’s August statement had 47 signatories, including former senior military leaders and former and current senior diplomats, from 16 countries.

At the February 2020 Munich Security Conference, Ernie Moniz hosted an EASLG luncheon, with a discussion led by Nathalie Tocci, Des Browne, and Sam Nunn, with more than 50 attendees including U.S. House Speaker Nancy Pelosi and other members of Congress.

The luncheon featured discussions of implications for Euro-Atlantic security of the growing tensions with Iran, Brexit, the U.S. electoral landscape, and the situation in Ukraine. An EASLG statement on Ukraine entitled “*Twelve Steps Toward Greater Security in Ukraine and the Euro-Atlantic Region*” was signed by more than 40 signatories from 13 countries across the Euro-Atlantic region and provided a menu of concrete, practical steps as options for consideration in support of the ongoing peace process related to Ukraine.



## Building U.S.-Russia Cooperation for Safe, Secure, and Peaceful Uses of Nuclear Technology

Even during the most intense periods of the Cold War, the United States and Russia were able to find common ground when it came to supporting the IAEA system to prevent the misuse of nuclear materials and equipment, as part of its work to ensure safe, secure, and peaceful uses of nuclear technology

around the world. Concerned that a growing divergence between the United States and Russia in recent years has eroded the IAEA's ability to do its important work, NTI and our Russian partner, the Center for Energy and Security Studies (CENESS), launched a two-year project to rebuild support for collaboration. The partnership's report, *The Future of IAEA Safeguards: Rebuilding the Vienna Spirit through Russian-U.S. Expert Dialogue*, was released in November. “The future credibility and sustainability of the Nuclear Non-Proliferation Treaty and the nuclear non-proliferation regime depend on the IAEA, and the IAEA depends on its two most powerful sources of resources, expertise, and rhetoric,” project leaders Anton Khlopkov of CENESS and Corey Hinderstein of NTI wrote. “It is in the world's best interest for the United States and Russia to work together.”

NTI and CENESS also continued their “Track 2” discussions of opportunities for U.S.-Russia cooperation on peaceful nuclear technology with a virtual meeting to discuss facility decommissioning and environmental restoration in each country's nuclear weapons complex, as well as planning for nuclear security at large public events. The results and recommendations from these meetings are routinely briefed to officials in the United States and Russia in anticipation of a future return to direct engagement between the two governments on nuclear topics.



## Strengthening the Nuclear Non-Proliferation Treaty

Every five years, countries that are party to the Treaty on the Non-Proliferation of Nuclear Weapons gather to assess implementation of the treaty. To support a successful Tenth NPT Review Conference (now postponed until August 2021), NTI has convened officials and experts from more than 20 countries through our Global Enterprise project to work to strengthen the NPT by identifying practical commitments that demonstrate the ability of countries to work together to advance treaty goals. Throughout 2020, the group continued to develop specific policy options aimed at improving transparency, strengthening risk reduction, and managing risks associated with fissile materials. NTI is continuing to work with government officials from around the world to promote these ideas and facilitate a productive Review Conference in 2021.

NTI also hosted regional workshops for government officials and experts in Brazil in late 2019 and in Ghana in 2020, with another planned for the Asia-Pacific region in 2021, to discuss regional non-proliferation and disarmament concerns and priorities; highlight opportunities for governments to contribute to strengthening the NPT and the review process; and develop and build support for practical steps, new initiatives, and tangible commitments that demonstrate the ability of NPT States Parties to work together to advance the treaty's goals. The workshops are designed to ensure that a broad range of perspectives are represented in building a shared foundation for progress.

## NPT Turns 50

Adopted in 1970 to prevent the spread of nuclear weapons and technology and to promote nuclear disarmament and peaceful uses of nuclear energy, the Treaty on the Non-Proliferation of Nuclear Weapons today stands as the cornerstone of global nuclear non-proliferation efforts. Although it has been largely successful, the treaty faces a number of challenges, including from Iran and North Korea. In March, speaking at a 50th anniversary event at the United Nations, Sam Nunn told government officials and diplomats that “despite the significant progress in reducing total nuclear stockpiles by 75 percent since their Cold War heights, the risk of use of nuclear weapons is growing.” NTI’s Richard Johnson had a similar message for Congress when he testified before subcommittees of the U.S. House Committee on Foreign Affairs: “While the NPT has been largely successful...the distinct cases of North Korea and Iran are clear exceptions that provide lessons for how to strengthen the treaty’s implementation.”





*At the February 2020 Munich Security Conference, Ernie Moniz hosted an EASLG luncheon, with a discussion led by Nathalie Tocci (pictured), Des Browne, and Sam Nunn.*

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# Harnessing Science and Technology

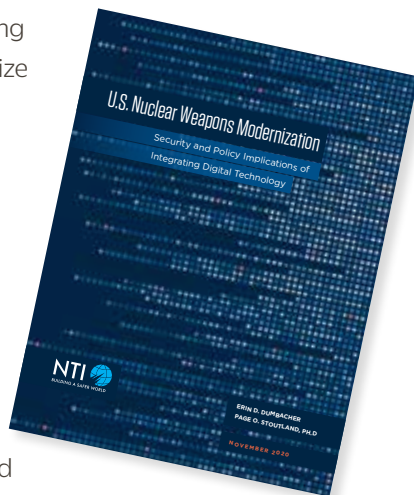
Today's rapid advances in science and new and emerging technologies offer enormous benefits when applied to computing and engineering, disease prevention and treatment, climate change, and other areas. At the same time, advances that make important progress possible too often are moving faster than the government policies needed to protect against mistakes and possible misuse. Gaps in the development of appropriate safety and security measures could allow cyberattacks on nuclear facilities or command-and-control systems, and advances in artificial intelligence could result in warfare at a pace and scale not previously possible. No weapons systems are immune to potentially devastating outcomes related to technological advances, nor are the world's top bio labs.

NTI is working to capture the benefits and address the peril of new technologies to reduce the risks of nuclear and biological attacks.

## Digitization and Automation in U.S. Nuclear Modernization

An expansive undertaking is underway to modernize U.S. nuclear bombs and warheads; their delivery systems; and the command, control, and communications infrastructure around them. This effort will bring the benefits of digitization and automation into the U.S. nuclear triad and the supporting nuclear weapons complex.

But it also carries significant risks, including some that are not fully understood. If the U.S. government does not take the time to protect these new systems from cyberattack, confidence in our deterrent may be reduced and the risks of nuclear use due to miscalculation or accident would increase.



Given the multiple risks associated with today's nuclear modernization program, NTI drew on open-source information to determine how digital systems and automation are included in the program. Our report, *U.S. Nuclear Weapons Modernization: Security and Policy Implications of Integrating Digital Technology*, offers recommendations for military and civilian leaders in the Departments of Defense and Energy, as well as those in oversight roles in the executive branch and Congress.

## Tracking Illicit Nuclear Trade

High-risk, illicit trade in nuclear materials, equipment, and technologies has undermined global nuclear non-proliferation efforts for decades. But now, even the most sophisticated actors leave traceable digital footprints. *Signals in the Noise: Preventing Nuclear Proliferation with Machine Learning and Publicly Available Information*, a report from NTI and Center for Advanced Defense Studies (C4ADS) released in January 2021, explores new ways to trace and expose nuclear proliferators. "Illicit trafficking of nuclear materials and technologies around

the world—whether by terrorist organizations, rogue states, criminal enterprises, or even unwitting mules—poses a serious threat to global security,” Ernie Moniz wrote in the foreword to the report. “Those who engage in such criminal acts evade detection by operating in the shadows and in plain sight. They use unusual routes and sketchy trading partners, and they use front companies as cover, concealing their trade in routine shipment lists. Today, however, new advances in data science and tools such as machine learning, in combination with greater amounts of publicly available information, can help us detect illicit trafficking and catch those who engage in it.”

## Cyber-Nuclear Forum

A successful cyberattack on a civilian nuclear facility’s networks could lead to the theft or diversion of nuclear materials, or even the release of radiation, undermining global

confidence in civilian nuclear power as a safe and reliable energy source. In February, NTI convened the second meeting of the Cyber-Nuclear Forum in Krems, Austria, with nearly 40 cyber-nuclear leaders from 16 countries. They discussed ways to strengthen cyber security at nuclear facilities, addressing best practices for portable device management, use of cloud services, supply chain security, and training for cyber-nuclear skills.

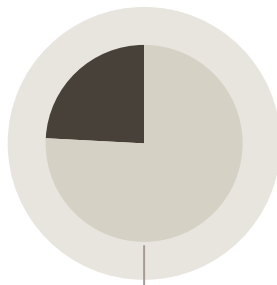
The Cyber-Nuclear Forum seeks to promote greater international cooperation by engaging and building a global network of cybersecurity experts from operational nuclear facilities. The project aims to enhance cybersecurity practices at nuclear facilities around the world; accelerate and amplify the capabilities of the limited number of skilled experts; and establish an industry-led, self-sustaining vehicle for facilities to get and stay ahead of the constantly evolving cyber-nuclear threats.

## By the Numbers

### MEASURING TODAY’S CYBER RISKS

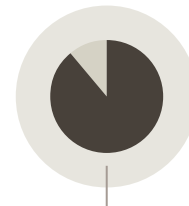
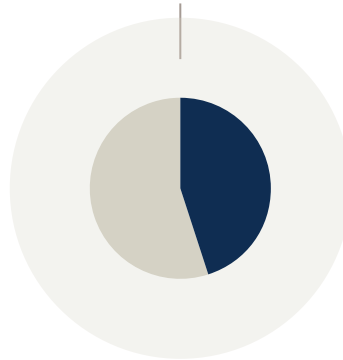
47%

THE NTI NUCLEAR SECURITY INDEX FOUND THAT FEWER THAN HALF OF COUNTRIES HAVE A RESPONSE PLAN FOR A CYBER INCIDENT AT A NUCLEAR FACILITY.



24%

NEARLY A QUARTER OF COUNTRIES WITH NUCLEAR MATERIALS AND FACILITIES RECEIVED A SCORE OF ZERO IN THE NTI INDEX FOR HAVING CYBERSECURITY REQUIREMENTS IN PLACE.



89%

AS PART OF A MASSIVE U.S. NUCLEAR MODERNIZATION PLAN, 41 OF 46 WEAPONS AND RELATED SYSTEMS WILL RECEIVE NEW OR UPGRADED DIGITAL COMPONENTS, WITH IMPLICATIONS FOR CYBERSECURITY.

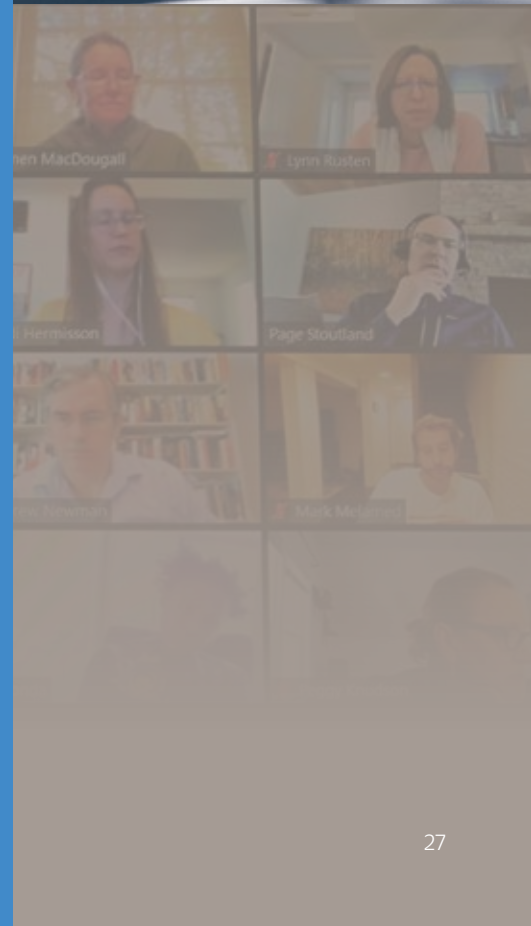


## NTI Goes Virtual

With our Washington, D.C. offices closed and all staff working remotely since the pandemic hit, NTI has held events online since March, including seminars and webinars with hundreds of viewers and participants. On COVID-19, we facilitated a half-dozen webinars, town halls, and private question-and-answer sessions with NTI | bio experts and communities across the country.

We also produced webinars for the release of the 2020 NTI Nuclear Security Index; a report on year one of Gender Champions in Nuclear Policy; a book launch for former Defense Secretary and emeritus NTI Board Member William J. Perry and nuclear security expert Tom Collina; and NTI Seminars on “The Military Case for Extending New START” with Lt. Gen Frank G. Klotz (U.S. Air Force, Ret.), “COVID-19: Vaccines, Therapeutics, and the Biosecurity Nexus” with Dr. Margaret A. Hamburg, former U.S. Food and Drug Administration commissioner and chair of the NTI | bio Advisory Group; and “The Precipice: Existential Risk and the Future of Humanity” with philosopher and philanthropist Toby Ord.

Although we miss the connections that in-person events create, audience size and NTI reach has increased significantly.





*President Donald Trump and Democratic presidential nominee Joe Biden square off in the first presidential debate of the 2020 campaign in Cleveland, Ohio on September 29.*

# Building Political Will

Today, the use of a nuclear weapon—by terrorists, by a nation intentionally, or more likely by accident or miscalculation—may be as hard to imagine as the specter of a world shut down by a virus. But just as with bio threats, nuclear risks have been on the rise for years. Our government's failure of imagination and insufficient planning to reduce these risks makes a nuclear incident all too possible. Put simply, too many citizens, elected leaders, government officials, and members of the news media ignore or give short shrift to the urgent need to do more to prevent the spread and use of nuclear weapons.

To build the political will needed to address nuclear dangers, NTI is working across multiple fronts to educate and engage the public about today's evolving and escalating risks and demand leaders take action to address them.

## Safer World 2020

Presidential election years create an opportunity to engage with voters and candidates on national security issues. Because issues like nonproliferation, arms control, and cyber threats can seem complex with little day-to-day impact on most people's lives, many voters don't feel compelled to demand action. That lets elected officials off the hook—and makes public education crucial to the mission of building a safer world.

It's not that people don't care. NTI polling by Hart Research conducted in 13 states in 2019 found that 8 in 10 voters said it was "essential" or "very important" for a presidential candidate to have clear plans and policies to address the threat of nuclear weapons. That's why NTI created the Safer World 2020 campaign—to create ways for the public to engage at a strategic moment.

During the presidential primary season, NTI leadership and experts brought the issues to voters and candidates for the White House and Congress through public events in multiple primary states, the news media, and social media. One example: In February, before the California primary, Ernie Moniz wrote a piece for *The San Francisco*

*Chronicle* urging voters to ask candidates about nuclear issues, including negotiations with Iran and extending the New START treaty with Russia.

In Berkeley, NTI hosted a public conversation—#Berkeley TalksNukes—with Ernie Moniz, NTI Board Member and former California Governor Jerry Brown, UC Berkeley's Bethany Goldblum, and NTI's Corey Hinderstein. NTI was honored when Hiroshima survivor Takashi Tanemori attended the event and shared his story. The call to action: Demand a plan to reduce nuclear threats.

Following the November election, NTI released two papers—*Reducing Nuclear Risks: An Urgent Agenda for 2021 and Beyond* and *Preventing the Next Global Biological Catastrophe*—with detailed recommendations for the Biden-Harris transition and the new Congress to confront and mitigate growing nuclear and biosecurity threats and reset U.S. nuclear and biological policy.

NTI continues to raise its profile on Capitol Hill through outreach to members of Congress and staff to inform them about NTI's work and serve as a respected and trusted source of expertise and creative ideas on reducing nuclear and biological risks.

## Hair Trigger Mobile Game Released



Aiming to raise awareness about today's nuclear threats among younger generations, NTI in July launched a dramatic new mobile game, *Hair Trigger*. With narration from Emmy Award-winning actor Harry Hamlin, the game draws on real life, close-call events. The player, in the role of president of the United States, navigates competing pressures while in a race against time to remove all nuclear weapons from hair-trigger status, in cooperation with Russia. Gameplay is affected by events and false alarms "ripped from the headlines," including historic close calls, human error, and the 2018 false missile alert in Hawaii.

While the game offers a fun and engaging challenge designed to generate curiosity, conversation, and action, the risks it presents are real. "Gen X, millennials, and Gen Z aren't old enough to remember the Cold War's ever-present fear of nuclear annihilation, but we are relying on them to find solutions to today's evolving nuclear risks," Ernie Moniz said when we launched the game at the virtual Games for Change Festival. "*Hair Trigger* brings those risks to life and can give players a taste of how challenging the job will be."

The game has had a great reception on social media and beyond. *Politico* challenged readers to try their hand at *Hair Trigger*, the New Zealand Foreign Ministry tweeted about the game, and Parliamentarians for Nuclear Non-Proliferation and Disarmament featured the game in a global webinar. Try it out at [www.HairTriggerGame.com!](http://www.HairTriggerGame.com!)

## 75th Anniversary of Hiroshima and Nagasaki

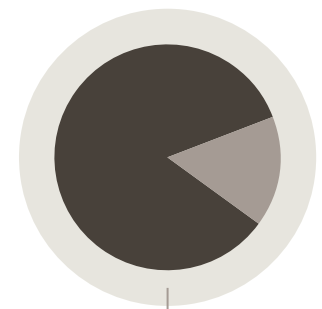
NTI marked the 75th anniversary of the bombings of Hiroshima and Nagasaki in World War II by remembering the victims and survivors and highlighting current nuclear dangers. As NTI Vice President Lynn Rusten wrote in *USA Today*, the anniversary was a reminder to the world "to never lose sight of the staggering human consequences of using nuclear weapons." NTI Co-Chair Sam Nunn spoke to the United Religions Initiative, which held online events for faith-based organizations, nuclear experts, and diplomats from around the world, and NTI's Joan Rohlfing and James McKeon outlined steps to prevent nuclear weapons from ever being used again for thousands of viewers during a two-day online event hosted by a global coalition. In an op-ed, Ernie Moniz recalled his 2018 visit to Hiroshima and called on nuclear-armed nations to reaffirm Ronald Reagan and Mikhail Gorbachev's assertion that "a nuclear war cannot be won and must never be fought."

### By the Numbers

## REACHING NEW AUDIENCES

19

TRUE STORIES AND CLOSE CALLS FEATURED IN NTI'S DRAMATIC NEW MOBILE GAME, *HAIR TRIGGER*.



84%

POLLING CONDUCTED IN 13 STATES FOR NTI FOUND THAT 8 IN 10 VOTERS SAY IT IS ESSENTIAL OR VERY IMPORTANT FOR A PRESIDENTIAL CANDIDATE TO HAVE CLEAR PLANS AND POLICIES TO ADDRESS THE THREAT OF NUCLEAR WEAPONS.



## *At the Brink* Takes Listeners Behind-the- Scenes on Nuclear Risks

When founding NTI board member and former Secretary of Defense William J. Perry declared that he believes the danger of a nuclear catastrophe is greater today than any time in history, his granddaughter, Lisa Perry, set out to discover why. In a podcast called *At the Brink*, Lisa tells the personal stories of presidents, cabinet heads, members of Congress, nuclear physicists, atomic bomb survivors, military officials, and activists. The podcast—supported by NTI and downloaded more than 70,000 times in more than 50 different countries—is a primer to help all of us learn how we can step back from the brink.

Some of the stories told in the first season of the podcast include Cynthia Lazaroff, who describes her 40 minutes of terror during the Hawaii nuclear missile false alarm in 2018. Bill Clinton describes the weight of the nuclear football. Setsuko Nakamura tells the chilling tale of how, at the age of 13 in 1945, she was the only survivor in her class when an atomic bomb was dropped on her city of Hiroshima. Andy Weber recalls serving at the U.S. embassy in Kazakhstan in 1994 when his auto mechanic asked if he wanted to buy some uranium. Sam Nunn talks about securing nuclear weapons and materials in the aftermath of the break-up of the Soviet Union, and NTI's Corey Hinderstein and Samantha Neakrase describe how to address the threat of nuclear terrorism.



*Adam Hitchcock and Rachel Salzman at a meeting of the Younger Generation Leaders Network in Brussels in 2016.*



# Fostering the Next Generation of Scholars, Experts, and Policy Makers

Today's students and young professionals will inherit enormous global security challenges, and NTI is committed to engaging, fostering, and preparing the next generation of thought leaders and policy makers for careers in nuclear and biosecurity. We build global networks, support training and post-graduate work for scholars, sponsor competitions, and maintain a robust internship program to encourage newcomers to the field.

## Younger Generation Leaders Network on Euro-Atlantic Security

Understanding that a lack of trust and dialogue between Russia and the West is a significant obstacle to Euro-Atlantic Security, NTI and several partners in 2014 launched a unique capacity-building initiative designed to develop and foster a new generation of leaders equipped to tackle global challenges fueled by historic animosities: The Younger Generation Leaders Network on Euro-Atlantic Security. The network was designed as a trust-building platform to help future generations learn to communicate with one another so that they may avoid making the same mistakes that have plagued previous generations in addressing the region's security issues. Today, the network, which is based at the European Leadership Network, has more than 90 young professionals from Europe, Russia, Ukraine, and the United States, including NTI Senior Program Officer Leon Ratz.

## Next Generation for Biosecurity Competition

To help cultivate a global cadre of multi-sectoral, young professionals dedicated to reducing global catastrophic biological risks, NTI in 2017 launched a Next Generation for Biosecurity Competition in partnership with the Next Generation Global Health Security Network. The competition is designed to foster cooperation across regions to develop innovative ideas to improve biosecurity. Winners of the annual competition, who receive a trip to present their work at the annual Global Health Security Agenda Ministerial Meeting, have hailed from Argentina, Azerbaijan, Canada, Kazakhstan, the Philippines, Uganda, the United Kingdom, and the United States.

## Connecting U.S. and Russian Students

Restoring dialogue between the United States and Russia, which together hold 90 percent of the world's nuclear weapons, is crucial to future progress on arms control and cooperation on global nonproliferation efforts. Since 2015, NTI has helped fund scholarships for Russian students accepted into a nonproliferation dual-degree program at the Middlebury Institute for International Studies at Monterey (MIIS). Geared to train the next generation of Russian and American experts on nonproliferation, nuclear policy, and global security, the

unique program is a joint collaboration between MIIS; the Moscow State Institute of International Relations; and the PIR Center, a Moscow-based non-governmental organization. Through NTI's support, up to three Russian students each year gain a comprehensive understanding of nonproliferation and global security issues and exposure to American colleagues and thinking.

## NTI Interns

NTI's robust internship program brings roughly 25 paid interns a year to NTI to work as integral members of our teams on projects that make lasting contributions to reducing threats posed by nuclear, radiological, and biological weapons, as well as related risks associated with advances in technology. Our internships primarily are for undergraduate and graduate students with an interest in the intersection of global affairs, public policy, science, engineering, and national security. Although our interns' primary focus is on NTI activities and projects, we encourage them to (virtually for much of 2020) attend relevant congressional hearings and briefings at think tanks, engage in other career-enhancing opportunities, and work to develop their professional networks. NTI gives each intern an opportunity to build a relationship with a mentor, in addition to working with a day-to-day manager to ensure the intern receives regular guidance and feedback.

## On-the-Job Training

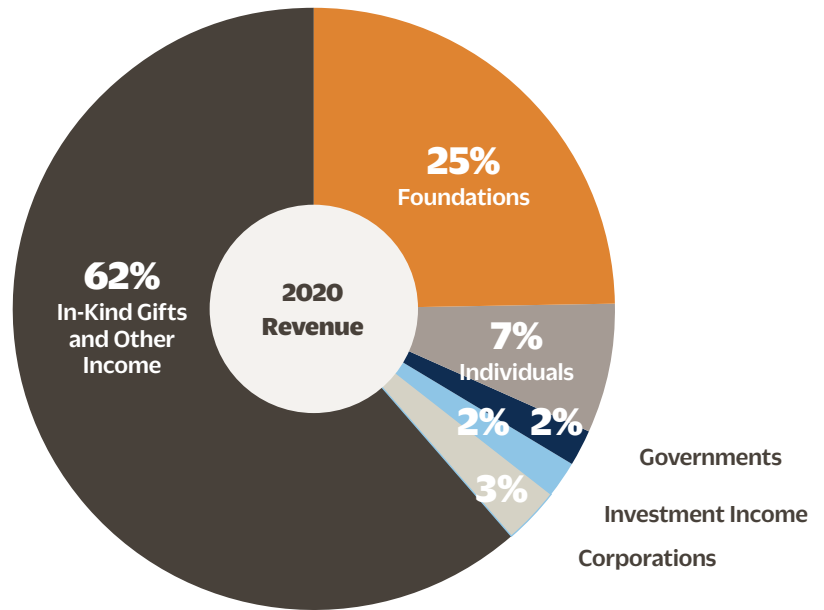
Since our founding, NTI has partnered with the James Martin Center for Nonproliferation Studies (CNS) at the Middlebury Institute of International Studies to produce extensive online and digital resources for the NTI website and associated social media channels. This includes in-depth, unbiased, free analysis that is a critical resource for academics, students, journalists, policy makers, and influencers around the world. NTI's partnership with CNS also gives young people a unique opportunity to work alongside experts and get hands-on experience. Since 2001, NTI has directly funded, in whole or in part, on-the-job training for more than 1,100 graduate research assistants and undergraduate interns. In evaluations, the students often cite work on the NTI site as contributing significantly to their understanding of and interest in the field.

## Supporting Scoville Fellowships

NTI proudly provides financial support to the prestigious Herbert Scoville Jr. Peace Fellowship, a highly competitive national fellowship program to bring recent college and graduate school alumni to Washington, D.C., to work on peace and security-related issues. In addition to providing financial support to the program, NTI hosts a full-time Scoville Fellow in our offices for up to nine months. We consider it a win-win: NTI gains a junior-level staffer who brings a fresh perspective to our work and the fellow gains real-world experience in the field. Scoville Fellows often go on to prominent positions in the federal government, academia, public-interest organizations, and the news media.

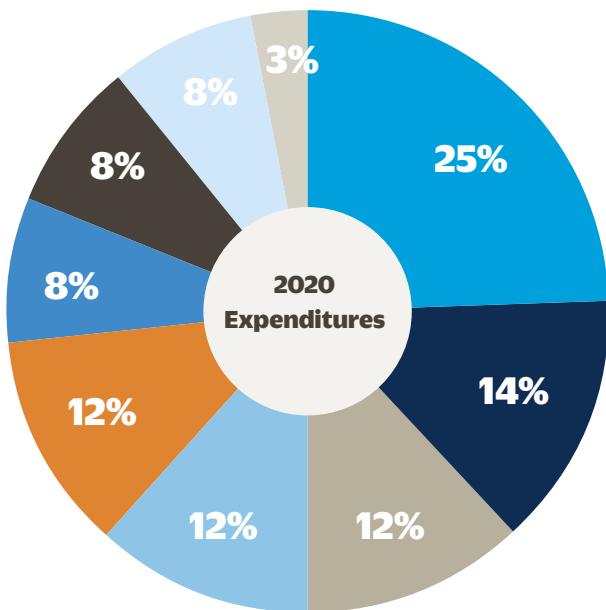
# 2020 Financials

## Where the Funds Came From



Due to rounding, numbers in charts do not add up to 100%.

## Where the Funds Were Spent



### 2020 Expenditures

Description	Amount
Global Biological Policy and Programs	\$ 5,838,558
Communications and Public Education	\$ 3,130,726
Management and General	\$ 2,739,087
Materials Risk Management	\$ 2,723,689
Global Nuclear Policy Program	\$ 2,687,519
International Fuel Cycle Strategies	\$ 1,779,386
Fundraising	\$ 1,759,428
Scientific and Technical Affairs	\$ 1,749,519
Other Program Services	\$ 686,535
<b>Total</b>	<b>\$ 23,094,447</b>

NTI is a tax exempt, public charity under Section 501(c)(3) of the U.S. Internal Revenue Code.

# Three Stories of Generosity

As NTI looks forward to celebrating its 20th anniversary in 2021, we want to thank those who have supported us along the way. Meet three supporters who are helping build a safer world:

**Laura Turner Seydel** joined the NTI Board of Directors in October 2019, following in the footsteps of her father, NTI Co-Founder and Co-Chair Ted Turner. “Since the 1980s, my father has been sounding the alarm about the two biggest existential threats to life: manmade climate change and nuclear weapons,” says Turner Seydel. “We humans created these problems, and now it’s imperative that we work to solve them. As for the threat of weapons of mass destruction (WMDs), NTI and its partners are leading efforts to reduce nuclear and biological threats. Future generations are counting on us to protect, restore, and hand over not only a livable earth, but a safer, healthier, and more peaceful one. My dad has done everything in his power to bring attention to these life-and-death issues so people from every walk of life, in every country, would be inspired to take action. Now we must do the same!”

**David Bernstein** knows from his work at Stanford’s Center for International Security and Cooperation the importance of international cooperation in preventing the spread and use of nuclear weapons. In the 1990s, he consulted to the Office of the U.S. Secretary of Defense and the Energy Department, working with the former Soviet states to convert parts of their military industry and nuclear weapons laboratories to civilian research and production. “NTI is a premier nonprofit organization working internationally to prevent the intentional or accidental use of nuclear weapons,” says Bernstein.

**Ray Rothrock** brought his many years’ experience investing in successful internet and energy start-ups to NTI when he joined its Board of Directors in April 2019. As a member of NTI’s Science and Technical Advisory Group, Rothrock helps NTI strategize on cutting-edge work like addressing cyber threats to nuclear security. “NTI is creative and forward-thinking in its efforts to identify and solve WMD challenges that are evolving faster than governments can keep up,” Rothrock says. “As a venture capitalist, I invest in the future, so I know that it’s not enough to learn from history. We need to anticipate and solve the problems of tomorrow.”



# With Thanks to Our Supporters

In 2020, for the second year in a row, NTI champion Warren Buffett challenged NTI to engage new donors and pledged to match all their gifts up to \$2 million. With generous support from 107 new donors, we exceeded this generous match.

NTI is extremely grateful to Mr. Buffett for his longstanding support of our work.

## Give a Gift with Global Impact

We invite you to join these donors to combat the most urgent security threats of the 21st century by supporting NTI's work. Your tax-deductible gift helps safeguard lives, livelihoods, and the environment, now and for future generations.

Donors to NTI enjoy a variety of opportunities to get engaged in our issues, including invitations to our Ask NTI webinar series with experts.

For more information or to make a tax-deductible contribution, including planned gifts, securities, donations from donor-advised funds, or to wire funds, please contact:

Peggy Knudson, Chief Development Officer  
(202) 417-4884 or [knudson@nti.org](mailto:knudson@nti.org)  
[www.nti.org/donate](http://www.nti.org/donate)



*At the Berkshire Hathaway Annual Shareholders Meeting in May, Warren Buffett commended NTI's work on biosecurity and nuclear threat reduction, efforts he has long supported.*

**“Per dollar expended, NTI is the best buy on earth for increasing the probability that humanity will reach its glorious potential, one undoubtedly beyond the imagination of even an optimist like me.”**

Warren Buffett

## Thank You!

We gratefully acknowledge all of our 2020 funders, including the following generous institutions and individuals who gave \$500 or more. Your gift to NTI makes the world safer. Thank you for your trust and for supporting this critical mission.

Anonymous	Margaret A. Hamburg, MD, and Peter F. Brown, The Brown- Hamburg Charitable Gift Fund	Svend Larsen
Robert Baker	Harry Hamlin	John Lichter
Brian and Ashley Bares, Bares Family Foundation	HDR Global Trading	Harold Lindmark, The Lindmark Charitable Account
David Bernstein	Siegfried and Nina Hecker	Walter and Karen Loewenstern, The Loewenstern Fund at Community Foundation Santa Cruz County
Charles A. Bowsher	Christopher Henrich, Henrich Family Charitable Fund	John D. and Catherine T. MacArthur Foundation
John Browne	John Hess, The Hess Foundation	Carmen E. MacDougall and Paul J. Allen
Warren Buffett	Jascha Hoffman, Jascha Hoffman Giving Fund	Noah Manduke
Robert Owen Bussey & Ellen Levy Bussey Trust	Lynn Holbein	John and Maude March, The Little Long Pond Fund
Canada Department of Foreign Affairs, Trade and Development	Laura S.H. Holgate	Paul and Susan Matteucci
Carnegie Corporation of New York	Michael J. and Linda R. Honigfort, The Michael and Linda Honigfort Family Fund	Fredericka and David Middleton
Chevron	Marshall and Yuko Hung, Marshall and Yuko Hung Foundation	Filipe Miranda
Kirsti and Bryant Chou	The Irving Family Fund at the Athens Area Community Foundation	Ernest J. Moniz
Coca-Cola Enterprises (in kind)	Sally Jobe	Domenic Narducci
DALHAP Investments Limited	Raymond Juzaitis	Michael Nesland
Democracy Fund (in kind)	Harold Kalishman	Achsah and Jeff Nesmith
Phil DePoy	Don R. Kania and Renee L. Dubois, The Don R. Kania and Renee L. Dubois Charitable Giving Account	Netherlands Ministry of Foreign Affairs
Timothy Diaz	Garth Kaste	Norwegian Ministry of Foreign Affairs
Le Roy "Terry" Eakin	Brenton Kessel, The Bushnell-Kessel Charitable Fund	Ronald and Jane Olson
Jack Edlow, Edlow International Company	James C. Kieffer, The Kieffer Family Fund	Open Philanthropy Project
Effective Altruism Foundation	Scott Kilner	Toby Ord, Centre for Effective Altruism
Christophe Egret	Eric and Jennifer Kirby, The Kirby Giving Fund	Victor J. Orphan, Coastal Community Foundation
Emirates Nuclear Energy Corporation	Anu and Corey Koberg	William J. Perry
Jim and Stephanie Evans	Susan Koch	Michael A. Peterson Foundation
Andrew Fisher		Peter G. Peterson Foundation
Founders Pledge		Robert and Betsy Pitts, Pitts Family Giving Fund
Morris Friedell		
Bill and Melinda Gates Foundation		
Good Ventures Foundation		
The Goodnow Fund		
Green Room Trust		

Ploughshares Fund

Rafe Pomerance, Pomerance Fund at  
the Greater Washington Community  
Foundation

Daniel Poneman

Prospect Hill Foundation

Herschel and Alice Ramsey

Justin and Indré Rockefeller,  
The Justin and Indré Rockefeller Fund

Michael Rogawski

Charles A. Rohe

Thomas F. Rosenbaum

Tom Rosshirt

Ray Rothrock

Lynn Rusten

R. Pito Salas, The Iguana Fund

Lawrence Satkowiak

Mark Scerbo

Val and Min-Myn Schaffner, Schaffner  
Family Foundation

Alan Schwartz, The Schwartz Family  
Foundation

Stephen and Amy Shapiro, The Amy  
and Stephen Shapiro Charitable  
Gift Fund

Clifford Sheets

Silicon Valley Community Foundation

Robert Smith

Southern Company Charitable  
Foundation, Inc.

Swedish Radiation Safety Authority

Ted Turner

UK Department for Business,  
Energy & Industrial Strategy

James von Herrmann, The von  
Herrmann Family Charity

Noah Walley

John Whitaker

Ellsworth Whiteman, The Whiteman  
Family Fund

George and Loretta Whitesides,  
The George and Loretta Whitesides  
Foundation

Malcolm Hewitt Wiener Foundation

Barrie and Deedee Wigmore,  
Wigmore Foundation

Marcia S. Wilson

Anika and Channing Wistar-Jones

Robert Wolfe

**“Future generations are  
counting on us to protect,  
restore, and hand over not  
only a livable earth, but a  
safer, healthier, and more  
peaceful one.”**

Laura Turner Seydel

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**Jack Brosnan**, Program Officer, Materials Risk Management

**Katherine Budeski**, Program Assistant, Global Biological Policy and Programs

**Jessica Bufford**, Program Officer, Materials Risk Management

**Gregory Butchello**, Executive Assistant and Events Coordinator

**Ryan Cahill**, Digital Communications Manager

**Mackenzie Cater**, Executive Assistant and Events Coordinator

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**Amy Cole**, Director for Grants and Contracts

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**Heidi Hermisson**, Director for Development

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**Mark Melamed**, Senior Director, Global Nuclear Policy Program

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**Samantha Neakrase**, Senior Director, Materials Risk Management

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**Tammy T. Ware**, Human Resources Administrator

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**Jaime Yassif**, Senior Fellow, Global Biological Policy and Programs

*As of December 2020*



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