A SPECIAL AMBASSADORS' FORUM

COMBATING BIOLOGICAL THREATS: A LEGAL AGENDA FOR FUTURE NATIONAL AND GLOBAL STRATEGIES

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AUGUST 2021

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NOTICES

This Forum opens discussion and observations on Combating Biological Threats: A Legal Agenda For Future National and Global Strategies [August 2021]. In the face of expanding national, regional, and global health and security challenges, a distinguished panel of scientists, academics, and diplomats focuses on past lessons and future outlook. The contributors offer recommendations for governmental and non-governmental strategies to reduce potential risks at home and abroad.

Video of the full conference may be found here:

https://ili.org/about/news/1275-combating-biological-threats.html

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"WHERE'S THE LAW? TRANSNATIONAL BIOLOGICAL THREATS REQUIRE TRANSNATIONAL REGULATION"

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COMBATING BIOLOGICAL THREATS:

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COMBATING BIOLOGICAL THREATS:
A LEGAL AGENDA FOR FUTURE NATIONAL AND GLOBAL STRATEGIES

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I. PREFACE

PROFESSOR YONAH ALEXANDER AND PROFESSOR DON WALLACE, JR.

EDITORS

The national, regional, and global spectrum of biological challenges is limitless. Throughout recorded history, these safety concerns stem essentially from two inevitable sources of enduring actual and potential dangers to individuals, communities, societies, and civilizations.

The first critical threat is caused by Mother Nature's disasters, such as earthquakes, cyclones, and infectious diseases. The second concern is man-made menaces, including violent radicalism, terrorism, and war. The key question is whether the United States and the international community are prepared to identify, prevent, and counter current and future biological threats.

This Preface of the current report on "Combating Biological Threats: A Legal Agenda For Future National And Global Strategies" (August 2021) offers an overview of health and security concerns as well as focusing on a wide-range of juridical topics from legislation to transnational regulation.

MOTHER NATURE AND MAN-MADE BIOLOGICAL THREATS

Biological agents are micro-organisms too small to be seen with the naked eye and can include bacteria, viruses, and fungi. Some of the most serious viral agents are those that produce, for example, smallpox and yellow fever. Bacterial agents can induce the plague and Anthrax.

Biological threats are difficult to control as they require a delivery system, or "vector," that can make distribution difficult and dangerous. Furthermore, it seems likely that if terrorists were to use a biological weapon, they would probably choose a bacteriological rather than a viral or rickettsial agent due to available countermeasures as well as the difficulty of cultivating viruses.

In addition, toxins, the poisonous byproducts of micro-organisms, plants, and animals, fall somewhere between biological and chemical agents as they are non-living substances. Toxins are relatively easy to manufacture and extremely virulent. Botulinum toxins, for example, can be more toxic than some nerve agents on an equal-weight basis.

Moreover, many agents are considered capable of spreading disease among humans, animals, or plants. Disease develops when people and animals are exposed to infectious micro-organisms or to chemicals which are produced by such organisms. After an incubation period, during which organisms are multiplied, the disease may even cause death. Mention should also be made of a number of fungal pathogens, such as smut of wheat, which is capable of destroying crops as well as resulting in famine and costly diseases.

Despite the wide array of biological challenges, historical and contemporary records provide extensive evidence regarding the nature, intensity, and health security implications of existing threats. These massive data sources also serve as a warning to beware of future catastrophic losses to human lives as well as political, social, economic, and strategic costs to those societies affected by biological pathogen attacks.

For example, in the 14th Century, the Black Plague wiped out 30-60 percent of Europe's population. Likewise, the 1918 influenza pandemic, regarded as the deadliest in modern times, killed an estimated 50 million people worldwide, about 675,000 of them in the United States. In addition, the Asian flu, originated in China in 1957-1958, resulted in the death of some one to four million people.

More recently, the sudden Ebola outbreak that began in 2014 presented a major health security challenge nationally, regionally, and globally. This deadly disease created unprecedented fear and anxiety over public safety, not only in parts of West Africa, but also in the United States, Europe, and elsewhere.

In fact, the Ebola virus reappeared in the Congo at different times during 2018-2020. Similar outbreaks as well as other contemporary health security challenges are anticipated in the future.

Mention should be made of the Zika virus infection that is spread by mosquitoes (which are also the vectors of many other diseases), sexually, and through blood transfusion as well as laboratory exposure. The disease causes microcephaly and many other birth defects. Another grave humanitarian concern is the cholera epidemic that has occurred in war-torn Yemen where more than 100,000 cases have been recorded by World Health Organization (WHO) sources, a quarter of them children. This disease is caused by bacteria from water or food contaminated with feces.

Supplementing Mother Nature's biological threats are man-made intentions and capabilities to deploy a wide range of weapons against perceived or actual adversaries in the struggle for power within and among nations. From the dawn of history to modern times numerous theologians, philosophers, politicians, military strategists, scientists, academics, and other participants and observers of the world's security concerns have underscored the continued trends toward mass destruction capabilities.

In sum, to prevent a potential "Black Plague"- like disaster as well as man-made threats, it behooves all nations to recall the warning in Shakespeare's King Lear. "We make guilty of our disasters the sun, the moon, and stars, as if we were villains on necessity; fools by heavenly compulsions…" (Act 1, Scene 2).

Bill Gates similarly asserted in a February 2017 Security Conference in Munich that "by the work of nature or the hands of a terrorist…an outbreak could kill tens of millions in the near future unless governments begin to prepare for these epidemics the same way we prepare for war."1

COVID-19: AN ACADEMIC CONTEXT

COVID-19 alarmed the world in 2019 and 2020 because similarities with the SARS (the respiratory syndrome) some 18 years ago, which killed almost 800 people. On March 11, 2020 the WHO declared the escalating biological threat a pandemic and two days later registered 8,710,703 COVID-19 cases, which had resulted in a total of 225,817 deaths. By the end of March 2021, the United States registered 30,104,368 COVID-19 cases resulting in a total of 549,578 deaths. During the same period, the pandemic confirmed 78,669,078 cases with a total death toll of 2,807,146 worldwide.2

Many questions have arisen during the past year ranging from the exact origin of the pandemic in China, to whether the worst is yet to come, to what are the best response practices to prevent the next potential outbreaks.

In view of the expanding biological threats that pose continual and unprecedented security challenges to the United States and abroad, we organized a total of six Zoom conferences in 2020: "Combating Global COVID-19: From Isolation to International Cooperation" (March 26, 2020); "Combating Global COVID-19: A Preliminary Assessment of Past lessons and Future Outlook" (April 14, 2020); "Global COVID-19 and the Economy: Costs, Lessons, and Future Outlook" (May 20, 2020); "Global COVID-19 and Energy: Threats and Responses" (June 25, 2020); "COVID-19 and Sports: Threats and Responses" (July 30, 2020); and "A Lab of One's Own: Fighting Bioterrorism, Cholera, and COVID-19" (November 17, 2020). The videos of the six Forums are accessible at the ILI website [www.ili.org].

Additionally, four printed publications drawn from the 2020 Events have already been released. The first is a Monograph on "Global COVID-19 and Sports: Exposure Claims and Liability Mitigation Considerations" published in September 2020. The second publication is an abbreviated version of the Monograph. It incorporated a slightly edited and updated Report on "Global COVID-19 and Sports: Threats and Responses" published in October 2020. That report consists of contributions by invited interdisciplinary panelists including Distinguished University Professor Rita Colwell (University of Maryland College Park and Johns Hopkins University Bloomberg School of Public Health); Dr. Richard B. Reff, MD (Orthopedic Surgeon and Sports Medicine Specialist); Carl Francis (Director of Communication at the National Football League Players Association); Chalana Damron, Tom Gies, Kristof Roox, and Laurence Winston (attorneys at Crowell & Moring); Ambassador (Ret.) Charles Ray (a former U.S. diplomat and military officer); and Ambassador Pjer Simunovic at the Embassy of Croatia. These publications are available to view at: http://ili.org/about/news/1243-iutcs-and-ili-host- ambassador-s-forum-global-covid-19-threats-and-responses.html

The third printed Report on "Combating Global COVID-19: From Isolation to International Cooperation" (November 2020) consists of contributions by invited interdisciplinary panelists at our Ambassador's Forum on the same topics that was held on March 26, 2020 via Zoom conferencing and hosted by the International Law Institute (ILI). Speakers at this Ambassador's Forum included Dr. Roberta DeBiasi (Chief of the Division of Pediatric Infectious Diseases at the Children's National Hospital); Dr. James Giordano (Professor in the Departments of Neurology and Biochemistry at Georgetown University Medical Center); Ambassador (Ret.) Charles Ray (Former U.S. Ambassador to Cambodia and Zimbabwe); Ford Rowan (Chairman of the National Bureau for Counter-Terrorism at the U.S. Department of State); Dr. Daniel Gerstein (Former Acting Undersecretary and Deputy Undersecretary for the Department of Homeland Security); Dr. Richard B. Reff, MD (Orthopedic Surgeon and Sports Medicine Specialist); and Dr. Tevi Troy (CEO of the American Health Policy Institute).

This printed Report is available at:

https://potomacinstitute.org/images/ICTS/ICUTS_COVID%20Isolation%20and%20Cooperation%20Report.pdf

[1] Avi Selk, "Bill Gates: Bioterrorism Could Kill More Than A Nuclear War – But No One Is ready To Deal With It." TheWashington Post. February 18, 2017.

[2] The statistical data is drawn from the John Hopkin's University global COVID-19 data, March 31, 2021.

The fourth printed Report on "A Lab of One's Own: Fighting Bioterrorism, Cholera, and COVID-19" (December 2020) is a slightly edited transcript of the initial Zoom conference held on November 17, 2020. Featuring a conversation with our friend and Distinguished University Professor Rita Colwell in honor of her latest acclaimed book titled "A Lab of One's Own: One Woman's Personal Journey Through Sexism in Science," published by Simon and Schuster in August 2020. Her compelling and inspiring memoir/manifesto, written in collaboration with Sharon Bertsch McGrayne is indeed an exceptional contribution to global health and security concerns.

Participating in the November 17, 2020 discussion with Professor Rita Colwell are our two commentators, Dr. Norman Kahn (National Security Consultant) and Dr. Vinton G. Cerf (Vice-President and Chief Internet Evangelist at Google). This printed Report is accessible at: https://potomacinstitute.org/images/ICTS/IUCTS_LabofOnesOwn_RitaColwell_2020_F.pdf

The first report of 2021 on "Combating Terrorism Amid COVID-19: Review of 2020 and Future Outlook" (June 2021) consisted of invited interdisciplinary academics and practitioners who participated at an Annual Ambassadors' Forum "Combating Terrorism Amid Covid-19: Review Of 2020 And Outlook For 2021 And Beyond" that was held virtually on February 25, 2021 at the International Law Institute. Opening remarks were made by Professor Don Wallace, Jr. (Chairman, International Law Institute); Dr. Jennifer Buss (CEO, Potomac Institute for Policy Studies); and Professor Robert Turner (Center for National Security Law, University of Virginia); This event was moderated by Professor Yonah Alexander (Director, Inter-University Center for Terrorism Studies). Speakers included Distinguished University Professor Rita Colwell (University of Maryland College Park and Johns Hopkins University Bloomberg School of Public Health); Hon. Richard Prosen (Deputy Director, Multi-Lateral Affairs Bureau of Counter Terrorism U.S. State Department); Hon. Guy B. Roberts (Former US Assistant Secretary of Defense for WMD Policy); and Ambassador (Ret.) Charles Ray (Former U.S. Ambassador to Cambodia and Zimbabwe).Three invited commentators also contributed to the discussion: Professor Natividad Carpintero-Santamaria (Professor at the Polytechnic University of Madrid (UPM) and General Secretary of the Instituto de Fusión Nuclear "Guillermo Velarde"); Dr. Milton Hoenig (Physicist); and Ambassador Pjer Simunovic at the Embassy of Croatia The entire Forum can be viewed at: https://www.ili.org/about/news/1269-ili-hosts-combating-terrorism-amid-covid-19.html. The report was released in June of 2021 and is accessible at: https://www.ili.org/training/1269-ili-hosts-combating-terrorism-amid-covid-19.html.

Finally, the current report on "Combating Biological Threats: A Legal Agenda For Future National And Global Strategies" (August 2021) consisted of invited interdisciplinary academics and practitioners who participated at a special virtual Forum held March 31, 2021 at the International Law Institute.

Opening remarks were made by Professor Don Wallace, Jr. (Chairman, International Law Institute); and Dr. Jennifer Buss (CEO, Potomac Institute for Policy Studies); This event was moderated by Professor Yonah Alexander (Director, Inter-University Center for Terrorism Studies).

Speakers included Distinguished University Professor Rita Colwell (University of Maryland College Park and Johns Hopkins University Bloomberg School of Public Health); Professor John Norton Moore (Director, National Security Law Center University of Virginia); Professor Abraham Sofaer (George P. Shultz Senior Fellow, the Hoover Institution, Stanford University); and Hon. Maria Eugenia de los Angeles Rettori (Head of Preventing and Responding to WMD/CBRN Terrorism Unit, United Nations Counter-Terrorism Centre, United Nations Office of Counter-Terrorism).

Two invited commentators also contributed to the discussion: Professor Robert Turner, SJD (Senior Fellow (Nonresident), National Security Institute Antonin Scalia Law School, George Mason University); and Dr. Nicholas Rostow (Senior Research Scholar, Yale Law School).

The entire Forum and Report can be found at: https://ili.org/about/news/1275-combating-biological-threats.html

ACKNOWLEDGEMENTS

Professor Alexander wishes to express his deep appreciation for the decades-long academic partnership with the International Law Institute (ILI) and the Potomac Institute for Policy Studies (PIPS). He is most grateful to Professor Don Wallace, Jr., Robert Sargin, and the ILI staff as well as the PIPS leadership of Dr. Jennifer Buss (CEO), General Al Gray (USMC (Ret.), Chairman of the Board) and Gail Clifford (VP for Financial Management & CFO). Special thanks are due to both Professor John Norton Moore and Professor Robert Turner, (Center for National Security Law, University of Virginia) for their continued inspiration and support of our academic work for many years.

Also, the internship program of the International University Center for Terrorism Studies (IUCTS), that is coordinated by Kevin Harrington, has provided research and administrative support for this publication. The IUCTS interns include: Victoria Airapetian (University of Maryland, College Park graduate), Sarah Butcher (Texas Tech University undergraduate), Daan de Zwart (the University of Amsterdam graduate), Kaley Henyon (Mercyhurst University undergraduate), Stephen Mathews (Pennsylvania State University undergraduate), Matthew Phenenger (Ohio Wesleyan University graduate), Rebecca Roth (Princeton University undergraduate), and Virag Turcsan (Erasmus Mundus Joint International Master's degree).

II. SELECTED HIGHLIGHTS [DRAWN FROM THE FORUM'S PARTICIPANTS]

1. Even though there are plenty of studies on cyber-security, there are still many unknown aspects to it and we must invest in additional research.
2. There is a lack of laws in place in the field of cyber-security, and currently there is no proper way of holding people accountable for cybercrimes.
3. There is an insufficiency of positive communication between the federal government and state governments regarding both policies and laws.
4. The global economy and public health are suffering because of the COVID-19 pandemic in addition to the seventh cholera pandemic.
5. The analysis of social and demographic factors such as population density, economic stability, age diversity, access to proper housing, medical practices, and wastewater analysis can help us to predict the effects of future pandemics.
6. Satellite imagery helps monitor the global public health risk of disease outbreaks but raises ethical concerns such as the ability to obtain data without personal agreement and other legal factors.
7. Anthrax investigations highlight the use of interagency cooperation and information sharing, raising discussions regarding how government agencies can work together within the rule of law.
8. There are current threats now dealt with by the FBI and CIA (mailing of powder claiming it is anthrax, or Ricin (toxic agent)). It is an ongoing legal challenge to protect against bioterrorist threats.
9. The continuous modification of predictive models utilizing satellite imagery to include environmental factors is vital to predicting the risks of pandemics like COVID-19, malaria, and cholera weeks in advance.
10. We desperately need to add another element to what we are doing. We need to take on the biology of the virus itself.
11. Social and political institutions change slowly. There is a tendency to take what we have always done and simply apply it on a larger scale.
12. The current approach misses the core issue of what we are now facing. We need another approach altogether.
13. We need to focus on four principal reasons to taking on and dealing with diseases themselves:
    a. We have underestimated the economic and political costs of the pandemic.
    b. Terrorist organizations will be encouraged to use biological threats going forward.
    C. The economic effects of the pandemic weakens national security.
    d. Like influenza, COVID could change annually and cause further destruction.
14. We need a major public-private partnership to effectively tackle the biology of COVID-19.
15. The goal should be to remove COVID-19 and Influenza as annual threats.
16. While states have adopted national laws related to bio-threats, nothing that could be characterized as a legally enforceable transnational mandate has been adopted.
17. Natural protections remain inadequate but individual states are improving protection through legal requirements.
18. The US has lost interest in pursuing multilateral arrangements to deal with transnational problems.
19. The US has given up on using international treaties and agencies to develop and implement policies, even when such efforts can significantly advance US interests.
20. It would be futile to limit the scope of the WHO's interests but create a separate WHO entity to deal exclusively with biohazards. This would enable states to financially target support for bio-threat activities.
21. The WHO needs accurate and proper reporting in dealing with major diseases, pandemics, and emergencies, including reviewing the work and research facilities. Safety standards should be used or amended to certify and inspect such research facilities.
22. Recent pandemics have demonstrated the need for a higher level of international preparedness which should be mandated through rules of law requiring equipment to be productive, produces, and stored at centers worldwide.
23. The COVID-19 pandemic may have made states willing to try to manage biological threats, not through national measures and unreliable international cooperation, but by enhancing the international system to create clear priorities, legal obligations in essential areas and effective administrative mechanisms.
24. The UN Office of Counter-Terrorism (UNOCT) was established in 2017 through the adoption of UNGA Resolution 71/291 and was a part of the Secretary-General's efforts to reform the counter-terrorism architecture of the UN.

25. Among its mandates, the UNOCT endeavors to enhance global coordination of the Counter-Terrorism Strategy; and has a capacity-building function.
26. In 2018, the UN Counter – Terrorism Centre [UNCCT] established a Program on Preventing and Responding to Weapons of Mass Destruction (WMD) and Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism.
27. UN Security Council [UNSC] Resolution 1540 was an iconic document affirming that the proliferation of nuclear, chemical, and biological weapons constitutes a threat to international peace and security.
28. Other UN instruments of biological risks include the Biological Weapons Convention and the UN Secretary-General's Mechanism for Investigation.
29. Biological weapons still pose a threat that is not as well-regulated as other threats, and scientific developments, emerging technologies and AI can increase the level of danger.
30. In July 2020, UNOCT organized a virtual counter-terrorism week, which focused on the challenges of countering terrorism in a global pandemic.
31. The pandemic increased the risk of bioterrorism and presented an opportunity that may inspire terrorist groups to perpetrate biological attacks.
32. In November 2020, UNCCT and INTERPOL published the Global Threat Study which revealed that there have been attempts at deliberate COVID 19 contamination, plot of surface contamination against Tunisian law enforcement, and ricin letters to the US President.
33. UNCCT has a number of projects with other actors such as the Chemical and Biological Preparedness and Response in Iraq with the State Department, and the CBRN preparedness and response project in Jordan with NATO.
34. Much has changed in terms of the threats posed by biological hazards. There is a tremendous risk of man-made bioterrorism today.
35. The destruction caused by the pandemic has given terrorists an incentive to play with biohazards.
36. We need to convince terrorists that committing acts of violence will not aid their cause.
37. Hopefully the "good guys" will be equally incentivized to work together and find solutions to the threat.
38. Bring senior government lawyers at the local, state and federal levels to work on pandemic preparedness and process.
39. From the public's point of view, the US was severely lacking in international coordination of COVID response.
40. President and his opposition made the COVID-response political--it should not have been politicized.
41. Both parties have demonstrated a shortage of leaders willing to stand for the nation's interests and general welfare.
42. Need for increased security against cyber-attacks on US infrastructure, such as the hack on Florida's water supply.
43. Computer protocols were not designed with security in mind; anything connected to the internet is very vulnerable.
44. Did COVID-19 originate from a lab in Wuhan, China? Or is it a natural release from bats?
45. The greatest threat to human health is mother-nature because we as a population are growing from seven billion to ten billion and encroaching on animals' territory. This exposes the human population to pathogenic agents carried by animals in places such as the Amazon in which we have no immunity to.
46. The COVID-19 virus is a member of the corona community family that influenza is from and we have adapted to the flu using annual booster shots. However, there are more variations of this virus we do not know about.
47. A deliberately released virus has a predictable outcome. A naturally released virus, however, has no predictable outcomes or solution and therefore poses major risks to global health.
48. New variants of the virus emerging and focusing on the traditional methods is not enough. We need to utilize existing research to combat the virus at a biological level.
49. America has a patriotism problem. Our schools are producing citizens who do not believe the United States is a force for good in the world.
50. If we want to keep doing good, we need to address this issue somehow.

III. OPENING REMARKS

DR. JENNIFER BUSS, CEO, Potomac Institute for Policy Studies

I wanted to thank everybody for yet another timely discussion that Yonah has planned for us. And to start today, there are a couple of current events that I'd like to bring up. I'm sure all of you will speak to these as well, and I certainly don't claim to be an expert in law or bioterrorism, so these are just a couple of my own observations, and things that we've been studying at the Potomac Institute. Recently, there was a water supply cyber-attack in Florida. I think it is really relevant. How do we handle responsibility for something like that? And, in an age where we have cyber defense and all sorts of cybersecurity rules at a federal level? I think that we're still not there yet with respect to something that has been studied so much, and there's even a whole military combatant command associated with it, that we don't yet have for bio, but we do have for cyber. We still don't have all of the laws in place or a proper way to hold people accountable, especially when those responsible are not in the United States.

There is a discussion currently happening about vaccine passports. Another phrase I've heard is called a "certification of immunity", and are there threats to having that? And what are the several civil liberties discussions surrounding that, and what does it mean for opening borders and how we handle international travel for both our citizens and other people?

The third thing that comes to mind, is looking at federal versus state rules and policies and laws. Because when something happens in local jurisdictions, they're not only the first responders, but they're the ones collecting information. They also help enforce the accountability and liability. So, when something happens in an outbreak, who do we hold responsible and how do we hold them accountable for the actions that they've caused to the local population, as well as from the national security perspective, to the United States, and the rest of the world? I'm sure most of you, or at least a couple of you can speak to the federal statutes that exist and how we go about handling that.

Again, these are just a couple topics off the top of my head, and I don't expect you to spend any time necessarily talking about each of them. But I wanted to say today how relevant I think this conversation is, and how important it is that we're having an open dialogue about it. Again, thanks for the introduction. Yonah, this is your seminar. He's been with the Institute for close to 25 years running the public discussion on terrorism studies. So, over to you to introduce your very well-renown crowd.

IV. CONTRIBUTORS' PRESENTATIONS

This section of the Report consists of presentations made by the contributors at the Special Forum: "Combating Biological Threats: A Legal Agenda For Future National And Global Strategies" that was held on March 31st, 2021 via Zoom conferencing. Some updates and revisions were made by the invited participants.

DISTINGUISHED UNIVERSITY PROFESSOR RITA COLWELL,

University Of Maryland, College Park; Johns Hopkins University, Bloomberg School of Public Health

It is a pleasure to participate in this Forum. I will provide a brief background for discussion. First, pandemics have been with us for centuries (Figure 1) and we can expect pandemics will occur in the future. Currently, there are two pandemics raging. The 7th pandemic of cholera, a global disease with cases in ca. 50 countries, afflicting millions, mainly in lesser developed countries and active since the 1960s. The COVID-19 pandemic began well over a year ago and millions have died from the disease. Thus, the threat of a biological agent to the global economy and public health is now clearly recognized.

The important lesson learned is that we need to prepare for future pandemics. Preparedness requires determining social and demographic factors that drive epidemics and pandemics, i.e., density of populations, economic stability, age diversity, access to proper housing, medical practices etc. One example of a new tool for public health arising from the COVID-19 pandemic is use of wastewater analysis, described in a previous Forum, to predict community risk of COVID-19. A public health tool derived from the cholera pandemic is application of satellite imagery to monitor global public health and risk of disease outbreaks. The use of these new tools developed in response to the two current pandemics requires attention to international law and legal considerations. Internationally recognized ethical practices need codification, i.e., data collection practices and attention to individual rights at a global scale.

The anthrax bioterrorism of 2001-2002 in the United States was addressed by a team of interagency representatives collaborating very effectively in an unofficial capacity, including officials of the FBI and CIA, and was able to trace the source of the anthrax powders. Will that lesson of interagency cooperation be adopted in the future, namely to work collaboratively, within the rule of law, to deal with a terrorist threat? Ongoing threats are met by specific government agencies, but as threats become more complex, interagency collaboration will be critical. How to achieve such cooperation and collaboration is the challenge.

Studies of recent pandemics have shown that environmental factors can play an important, if not vital, role in pandemics. Cholera is a prime example and COVID-19 was found to have environmental drivers as well. Thus, environmental parameters can be included in prediction models with satellite sensors providing the data. In fact, COVID-19 risk prediction models have been developed, similar to cholera risk prediction models used by pandemic response teams in Yemen. A global monitoring system for pandemic risk prediction and monitoring would be a valuable effort for the immediate future.

PROFESSOR JOHN NORTON MOORE,

Director, National Security Law Center University of Virginia

A BIOLOGICAL ATTACK AGAINST COVID-19 AND INFLUENZA

Yonah, thank you and Don for running these programs that bring together this extraordinary group you've got here today; and Rita what a wonderful presentation and thank you for your great work in this area.

What I'm going to talk about rather informally is an opinion piece and some work I've been doing jointly with Guy Roberts, who as you know among other things was the Deputy Secretary General at NATO for Weapons of Mass Destruction, and also three top research physicians, one of whom is a former medical faculty member at Harvard, and Chief Scientific Advisor at the hospital for special surgery in New York, and that's Steven Goldring.

Let me start by saying that social and political institutions change slowly and that's true even when we deal with major problems. There is a tendency of these institutions after training people in particular modalities of dealing with such problems to do the same thing we've done before except perhaps to do it on a larger scale. If you look at the traditional responses to this pandemic, what you will find overwhelmingly is that the expert community is telling us we just simply need to do a much better job at prediction, at testing, at the ability to quarantine, and to apply the traditional approaches that we have all seen in dealing with COVID-19. Those things are indeed important and we should do them much better than we have done them before. There's no question that we've been lacking in so many of those areas, but I think, and the group I'm working with believes, that this misses the core issue of the enormous seriousness of what we're facing now and another approach altogether that we need to be taking.

Before I tell you what that is, let me also suggest that there's another reason in dealing with medical issues and medical public policy that also tracks I think the same reason why we're seeing these traditional approaches even in response to the pandemic. That is with a few exceptions, like dealing with cancer or dealing with AIDS; things that get very high political visibility, we have focused almost exclusively in the medical debate on access to health care and we have not had the level of focus that we should, that I believe, modern science suggests on actually taking on and dealing with the diseases themselves. So what our group is recommending and what we believe is essential right now in the entire Covid range and Influenza range and yes, Rita it would be good if we can take them all on. Probably Cholera and others need to be taken on this way too but at least as a starting point we must deal with Covid and the entire Covid range and the Influenza range of viruses. We need to fundamentally take on the virus itself at the biological level with a massive public-private operation drawing on both government expertise and that of the private sector that is very much like let's say the Apollo program. Critically, our pandemic preparedness should seek to decisively defeat corona and influenza viruses, as we have previously defeated smallpox and largely defeated polio. The war against these viruses should encourage communication between all relevant sciences working on the problem.

There is a wonderful study put out by the Council on Foreign Relations doing its usual high quality work called, “Improving Pandemic Preparedness: Lessons From COVID-19” and when you look at this, it is probably one of the best compilations of doing the traditional things that I've seen. But one member of this group with a background in biological development of anti-virals said, “No”. We need to do something else in addition to these things. It's not either or, but critically in addition we need to take on the viruses themselves. We need to have a very fundamental attack on the viruses themselves and everything you need to do with it in relation to antivirals, in relation to speed of development of vaccines, and all the rest in trying to go at it. The total removal of Covid-19 and Influenza viruses and their mutations as pandemic threats is the ultimate goal of this proposed public-private operation. This operation is essential to be utilized in order to counter against future viruses and mutations that pose similar threats to our national security and economic well-being. Two other members of the council group joined that proposal.

The recent excellent presentation in the Wall Street Journal of what do we do with the pandemic once again says all the things we need to do better than we've been doing in the past. That is the traditional approach. But no one is basically saying, “No. It is now time to have a fundamental attack on the viruses themselves in relation at least to the covid grouping and the influenza grouping.” Now what are some of the fundamental reasons supporting that? The first is I think that we are hugely underestimating the economic cost and effect globally of what's going on here. The estimate is that the covid cost to the United States alone quite apart from some of the terrible over-expenditures of the current Democratic administration, is going to hit us over a period of years at a total cost of about 16 trillion dollars. Now add that to what's happening all over the world and you add this also to what happened in 2008 and ‘09 economically that we really haven't fundamentally come out of even yet. Massive liquidity expansion from the Federal Reserve and central banks all over the world which hasn't even stopped after 2008-09. If we have another major pandemic within the next few years, perhaps the next 10 years on top of this one, I think the potential for some kind of terrible lasting very difficult to get out of global depression and other issues economically that would go with it are very serious including the level of political unrest that would likely follow such an event.

The second reason gets us to the bio-terror component of it, because there are a number of reasons that suggest that Covid raised the risk of bio-terror. One of those is that at least so far it looks as though the Democratic West has been economically and otherwise and politically affected more than the non-Democratic players. Those non-democratic players also are the ones that are more attracted to the potential use of bio-weapons. Then we throw in the other element here, that Rita has indicated we now have this CRISPR technology. For those of you that don't follow up on all this as Rita does that's clustered regularly interspaced palindromic repeats, which is a methodology for being able to take the RNA and to dramatically alter cells. So when we think about this and the other terrible weapons of mass destruction or nuclear, there's lots of awful news with nuclear but the one bit of good news is that you have to get the plutonium or the U235 and it's hard to do. You can't just walk down the street and find it. You can't just be a second rate terror group and find it. It's very difficult to do. But there's some reason to believe that CRISPR technology in producing some of the bio-stuff is going to turn out to be a lot easier and we know that ISIS among other terror groups has been experimenting with it. The severe human and economic disaster from Covid-19 especially in the Democratic West has enticed ISIS and other terror groups to experiment with this technology and increased the risk of copycat bio-terror attacks.

A third component of all this is that when we look at the implications for national security, it's really staggering because national security depends so much on a sound and strong economy and the implications of all this for our economy is just so great. The implications for hitting our troops in the field is so great and just as most of you know that's been repeated over and over but I can't resist this one. So far as Bob Turner and I have added some of this stuff up, and thank you Bob, this looks as though we have already, with COVID-19 alone, killed more Americans than one-half the total combatant casualties in all wars fought by the United States in its entire history including the Civil War. You have to look at that and say wait a minute guys we have a national security problem here.

Finally as a fourth reason, let's go to the very good point that Rita made. If you look at what we are doing with Influenza, well we are having people even with the every year making the new vaccines for it and, with each year's new booster shots we are still losing from 20,000 to 60,000 Americans with the Influenza viruses year after year. Now, COVID-19 is at least 10 times deadlier and so if you really want to have 200,000 to 600,000 deaths every year repeating in the United States from COVID-19 I would suggest that alone is going to do some pretty terrible things to the economy, to our national security, and to the stability of our political process. The point is, we need this major public-private partnership as the number one thing to be taking on the biology of the Covid-19 virus, and at the same time take on the influenza virus as well. Now what is the cost of this and is any of this doable? I suppose we won't fully know whether it's doable until we try, but this is something we must try. Let's just look at the cost of the original Biden pandemic package quite apart from the new one he is revealing today. His pandemic package was two trillion. What did it cost for the entire Apollo program in relation to the public-private partnership there? The answer is it was only $23 billion in 2019 terms. So this is chump change compared to the economic damage and even the opportunistic spending that is being done in the name of Covid-19. So I would say we desperately need to add another element to what we're doing. We need to take on the biology of the virus itself in a fundamental effort dealing with effects on organs, dealing with antivirals, dealing with vaccines, dealing with speed of vaccine production, dealing with learning everything possible about the Covid and Influenza groupings and take them on biologically the best we can. The goal must be to take the Covid and Influenza grouping of viruses off the table as pandemic or continuing yearly threats.

PROFESSOR ABRAHAM SOFAER,
George P. Shultz Senior Fellow Emeritus, the Hoover Institution, Stanford University

"WHERE'S THE LAW? TRANSNATIONAL BIOLOGICAL THREATS REQUIRE TRANSNATIONAL REGULATION"*

I am happy to participate in this event, which brings me together with old friends to propose something as important as it is difficult – a legal strategy to enhance protection of human health from national and transnational biological threats.

Yonah Alexander and Don Wallace have summarized the dangers we face from biological threats, and Professors Colwell, Kerr and others (including my brilliant colleague Dr. Lucy Shapiro) have described the technologies available to States and non-State actors, the insecurities regarding nature-generated threats, and the transnational nature of both the threats and the measures available for their possible mitigation.

Despite these sobering appraisals, legal experts would acknowledge that, while States have adopted national laws related to bio-threats, nothing that could be characterized as a legally enforceable transnational mandate has been adopted. Perhaps the staggering, worldwide loss of life and hardships caused by Covid-19 will change this situation. If not, even more destructive developments await. It behooves us, therefore, as my recently departed hero George P. Shultz often said, to prepare the garden by planting ideas that could advance protection against these quintessentially transnational dangers.

For purposes of regulation, bio-threats can be seen as falling into three categories: (1) bio-weapons created by States or non-State actors; (2) bio-disasters caused by humans; and (3) bio-disasters caused by nature (with or without human responsibility). Each category potentially generates major incidents. But the greatest disasters thus far have been caused by human error and natural forces.

The role of law in dealing with threats generated by all three categories is modest. The Biological & Toxins Weapons Convention's sweeping declaration that all States Parties (now numbering 180) agree not to develop or use biological weapons is just that -- a declaration. The BTWC has no enforcement provisions and covers only the development and use of weapons; it permits research and even testing of biological substances, toxins, and viruses. Efforts have been made to extend the work of entities created pursuant to that treaty to mitigate some excluded dangers. These are useful but all voluntary. The World Health Organization (WHO) has authorities that create moral pressure on States to report health threats. But its standards cannot be enforced. The WHO, for example, was able to convince China to permit a group of experts to visit Wuhan to determine how Covid-19 originated; but the group's work was restricted, leading the Wall Street Journal (perhaps unjustifiably) to condemn the group's report as "The Wuhan Whitewash."

International agencies do exist that significantly reduce transnational dangers through legal regulation. These are the so-called specialized as opposed to the political agencies of the United Nations (UN). For example, the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) have assemblies in which all Member States are represented with authority to approve standards, practices, and programs. Those assemblies are served by technical committees that develop the standards and other proposals for the assemblies to consider; and councils appointed by the assemblies guide the work of the technical committees and assemblies.

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The WHO is also a specialized agency. Its World Health Assembly (WHA) of all (194) Member States elects an Executive Board of 34 members who are supposed to be technically qualified in the field of health, as well as a Director General (DG). The Executive Committee, led by the DG, implements decisions of the WHA and advises and facilitates the WHA's activities. The WHO has roots that go back to the mid-19th century. It has over 7000 employees implementing programs through six semi-autonomous regional offices and some 150 field offices, with a budget that has increased from $5 million in 1948 to over $7 billion. Contributions to all programs are voluntary.

The contributions of specialized agencies to transnational security develop slowly and fall short of perfection, but they are valuable. The IMO, for example, has adopted hundreds of rules and regulations improving maritime safety. ICAO has adopted regulations that govern the conduct of commercial aviation, including where and when non-military planes may fly, as well as requirements that they be certified as safe. The WHO, too, has many achievements to its credit, especially in collecting and disseminating health care related data, and in undertaking projects to eliminate or curb diseases, including smallpox, polio, malaria, Ebola, and most recently Covid-19.

Why, then, if we have demonstrated the capacity collectively to adopt useful regulatory structures to deal with these (and other) transnational challenges, have we been so slow in considering how to use international law to enhance safety from biological threats? National protections remain inadequate, but individual States are improving protection through legal requirements. International efforts, on the other hand, have been limited to voluntary cooperation and ad hoc actions.

The most fundamental reason for this situation is that the U.S. has lost interest in pursuing multilateral arrangements to deal with transnational problems.

Transnational regimes have always had deficiencies and drawbacks. Nonetheless, we engaged in multilateral efforts from the Charter's adoption until the early 1990s. As Legal Adviser at the State Department from 1985 to 1990, I helped shepherd into existence or improve such agreements as the International Space Station, the Antarctica Convention, the INF Treaty, the Maritime Terrorism Convention, the Montreal Convention concerning air pollution, and ratification of the Genocide and Torture Conventions.

Then came the proposal to create an International Criminal Court (ICC). The U.S. government worked on the proposal in good faith, attempting to develop a forum in which to try major violators of established international crimes. The process was taken over, however, by States determined to include as defendants States that violated the narrow view that many international lawyers have of the legitimate use of force. They made no secret that they were aiming at the U.S. Other, major disappointments followed, including the International Court of Justice (ICJ)'s taking jurisdiction over use-of-force and capital punishment issues under FCN treaties and the Consular Convention.

The U.S. reacted by refusing to support the ICC and by withdrawing from the ICJ's jurisdiction under the FCN and Consular treaties. Regrettably, the U.S. also largely gave up on using international treaties and agencies to develop and implement policies even when such efforts might advance U.S. interests.

We need to get back to engaging internationally when it is in our interests to do so. We know how to fight for what we believe in and should be mature enough to agree acceptable compromises when necessary. That is the nature of politics, both national and international. Developing an effective legal strategy to defend against international bio (and chemical) threats would serve U.S. interests.

Committing to a more robust international effort to respond to bio-threats would be only the first step. The U.S. would then have to deal with the difficulties associated with multilateral arrangements. And any sound strategy to enhance protection against bio-threats will require significant shifts away from current assumptions.

First, while the U.S. should continue to support the important work being done to increase cooperation among BTWC (and CWC) Member States in dealing with the potential use of BCW by States or terrorists, the BTWC should be set aside in fashioning responses to health crises. States are more likely to cooperate in dealing with biological threats in a context that excludes determinations related to BTCW (or CWC) responsibility.

The desire of States to retain control of national security issues is exemplified in the policies adopted to achieve other multilateral agreements. Governments approved the Montreal Convention creating standards for civilian aviation because it exempted military aircraft. The Maritime conventions became practicable by exempting national navies. And evidence of this policy division can also be seen in the limitation imposed on the WHO in considering radiological threats caused by nuclear activities. The International Atomic Energy Agency has the primary responsibility for coordinating research and development of atomic energy for peaceful uses; the WHO is entitled only to promote coordinating international health activities on the issue.

Second, while efforts to develop rules relating to non-military bio-threats should avoid relying on the BTWC, any such effort should rely on the WHO, given its experience and resources despite its having the usual shortcomings of major UN agencies. Relying on the WHO has a particular, potential disadvantage, however: its extremely wide range of objectives, many of which are less concrete and urgent than protecting human health from bio-threats. For example, the WHO issues recommendations concerning morbidity, mortality, pregnancy, childhood, adolescence, sexual and reproductive health, unhealthy substances, food safety, "sustainable development," surgical safety, and even restrictions on computer use. It would be futile to attempt to limit the scope of the WHO's interests. But it seems essential to create a separate, WHO entity to deal exclusively with bio-hazards. In addition to ensuring separate WHO focus on this concern, such an arrangement would have at least two additional benefits: (1) it would enable States to restrict the WHO's new legal authorities to the tasks associated with bio-threats; and (2) it would enable States to target financial support for bio-threat activities.

Third, the U.S. should consider what new powers and responsibilities to give the WHO to respond to biological (or chemical) threats whatever their source. This will require input from scientific experts and individuals with national and international regulatory experience. But any new strategy should rely on the agency's current programs, with modifications aimed at improving outcomes through mandates that are both effective and acceptable to Member States.

Reporting Requirements. Information is at the heart of the WHO's efforts to improve health care worldwide. The need for accurate and prompt reporting is particularly acute in dealing with major diseases, pandemics, and emergencies, including reviewing the work at research facilities to determine compliance with established standards, and identifying dangerous developments. A sound strategy would include making mandatory all reporting requirements related to bio-threats under WHO jurisdiction.

Scientific Input. The WHO process for identifying needs and developing proposals to deal with them should be modified to enhance the influence of technically proficient experts. This has been achieved in other specialized agencies, as well as at the U.S. National Institutes for Health in its use of experts to review grant proposal and at the FDA to review proposed medicines. The WHA's 36 member expert committee could be empowered, for example, subject to established standards, to appoint a much smaller group of experts to review proposals for WHO review or action.

Safety standards. WHO has issued or adopted safety standards for labs engaged in research with dangerous biological substances or toxins. Existing standards should be used, amended as necessary, to certify and inspect such research facilities whether under government or private control. Remedial measures should be adopted to encourage compliance with such standards, as in airline and maritime regulation.

Preparedness. Recent pandemics have demonstrated the need for a higher level of international preparedness to deal with health emergencies. Equipment needed to deal with hazards should be manufactured in advance and stored at centers worldwide. States should be urged to maintain necessary capacities and assisted in doing so. Teams of experts and volunteers (including NGOs such as the Red Cross) should be organized and kept in readiness to be sent to trouble spots, as the UN sends peacekeepers. The WHO should issue guidelines for such activities, including mandates where necessary, as in financial reporting requirements.

Cooperation and Assistance. States should commit to cooperating and assisting each other directly or through the WHO and other organizations. International assistance to needy populations is essential, and the U.S. should lead such efforts. The U.S. should insist, however, that the WHO avoid attempts to require States to sacrifice the health of their populations, or to surrender benefits based on natural resources, facilities, contractual arrangements, or financial incentives for drug and device discovery. Assisting needy peoples should not require surrendering national advantages and values. Vaccines are not, for example, "global goods."

Finally, an international legal strategy must include an understanding as to the manner in which new authorities should be implemented. Here, again, the most effective option will not necessarily be the most obvious. Competent WHO personnel operating out of regional or national offices will be necessary to report information, to perform inspections, to assist in preparedness, and to deal with emergencies. But these personnel will operate more effectively if they act in conjunction with national agencies, rather than being seen as policing national performance. WHO personnel must remain independent. But the new authorities they will be exercising are unprecedented, and are likely to be approved by WHO Member States only if the WHO role is seen as intended to assist rather than to attempt to supervise national systems.

The Covid-19 pandemic has shaken the world and caused great damage. But it may also have made States willing to try to manage bio-threats, not merely through national measures and ad hoc and unreliable international cooperation, but also by enhancing the international system to create clear priorities, legal obligations in essential areas, and effective administrative mechanisms. As former Ambassador Charles Ray has said: We must "revitalize our moribund diplomatic capability . . . essential to building and maintaining the web of relationships that are critical to mounting global campaigns against global threats."

Disputes about the WHO's capacity to resist Chinese pressure concerning what happened in Wuhan should not obscure the U.S. interest in advancing global health. As Secretary Shultz testified after the Soviets shot down the Korean Air Lines passenger plane in 1983: "President Reagan made sure the world knew the full unvarnished truth about the atrocity; nevertheless, he also sent our arms control negotiators back to Geneva, because he believed that a reduction in nuclear weapons was a critical priority". Enhancing the WHO's legal authority will, if anything, enhance its capacity to resist political pressure and advance global health.

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"UNITED NATIONS EFFORTS ON COUNTERING BIOTERRORISM"

The United Nations Office of Counter-Terrorism and its United Nations Counter-Terrorism Centre, The United Nations Office of Counter-Terrorism (UNOCT) was established on 15 June 2017 through the adoption of UN General Assembly Resolution 71/291 as a result of the first reform initiated by the United Nations (UN) Secretary-General Mr. Antonio Guterres. Mr. Vladimir Voronkov was appointed as its first Under-Secretary-General on 21 June 2017.

A new security architecture of the UN was created and the previously existing entities with counter-terrorism mandate – Counter-Terrorism Implementation Task Force Office (CTITF) and UN Counter-Terrorism Centre (UNCCT), established in 2006 and 2011 respectively – were moved out of the then UN Department of Political Affairs into the new Office of Counter-Terrorism.

The UN Global Counter-Terrorism Strategy (A/RES/60/288) and its biennial UN General Assembly Review resolutions provide the substance of UNOCT's mandate. The Strategy was adopted unanimously on 8 September 2006 by the UN General Assembly and became a unique global instrument to enhance national, regional and international efforts to counter terrorism. The UN General Assembly reviews the Strategy every two years, making it a living document attuned to Member States' counter-terrorism priorities. This year the Strategy will undergo its 7th review.

UNOCT has five main functions: 1) provide leadership on the UN General Assembly counter-terrorism mandates entrusted to the UN Secretary-General from across the UN system; 2) enhance coordination and coherence across the Global Counter-Terrorism Coordination Compact entities to ensure the balanced implementation of the four pillars of the UN Global Counter-Terrorism Strategy; 3) strengthen the delivery of UN counter-terrorism capacity-building assistance to Member States; 4) improve visibility, advocacy and resource mobilization for UN counter-terrorism efforts; 5) ensure that due priority is given to counterterrorism across the UN system and that the important work on preventing violent extremism is firmly rooted in the Strategy.

In light of the coordination function, UNOCT has been given the mandate to coordinate the coherence across more than 43 entities dealing with counterterrorism – the UN Global Counter-Terrorism Coordination Compact. These entities collaborate, as members or observers, through eight inter-agency Working Groups, tasked with operationalizing, under the Compact's umbrella, enhancing coordination and coherence of UN counter-terrorism efforts with a view to achieving concrete impact on the ground.

The capacity-building function of UNOCT is fulfilled by UNCCT, that provides UN Member States with the necessary policy support and spread in-depth knowledge of the UN Global Counter-Terrorism Strategy, and wherever necessary, expedite delivery of technical assistance across four pillars of the Strategy.

UNCCT's Programme on Preventing and Responding to Weapons of Mass Destruction (WMD) and Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism was established in 2018, right after the creation of UNOCT. The Programme seeks to enhance capacities of Member States, International Organizations, and UN entities to prevent, prepare for, and respond to terrorist attacks involving WMD and CBRN materials, to advance their understanding of the level of this threat, supports their prevention, preparedness and response efforts at their request. Please, visit our webpage for more information on our work: https://www.un.org/counterterrorism/cct/chemical-biological-radiological-and-nuclear-terrorism

The UN framework against Bioterrorism

The UN provides Member-States with a solid legal framework against Bioterrorism.

The following most relevant documents reflect efforts made by:

a.] UN Nations General Assembly: UN Global Counter-Terrorism Strategy (2006)
b.] UN Security Council: Resolutions 1373 (2001), 1540 (2004), and 2325 (2016)
c.] UN Secretary-General: United Nations Secretary-General Disarmament Agenda

The iconic document that forms the basis for our work is the UN Security Council resolution 1540 (2004), by means of which the UN Security Council affirmed that the proliferation of nuclear, chemical, and biological weapons and their means of delivery constitutes a threat to international peace and security and obliged Member States to refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery. The recent Resolution 2325 called on all States to strengthen national anti-proliferation regimes in implementation of Resolution 1540.

Other UN instruments on biological deliberate events also include: the Biological Weapons Convention and the UN Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons.

Nevertheless, in spite of this solid legal base, biological weapons pose a threat that is still not as well-regulated as the one coming from other weapons (for example, the regime established by the IAEA). This gap, combined with scientific developments and emerging technologies such as biotechnology, synthetic biology, the use of artificial intelligence, can increase the level of danger.

COVID-19 AND BIOTERRORISM

We are living in the times of COVID-19 – a pandemic that put critical health infrastructure at strain, showed us the vulnerabilities of response systems, and tested the resilience of the whole world. In April 2020 UN Secretary-General Antonio Guterres, while briefing the UN Security Council, explicitly drew parallels between COVID-19 and risk of bioterrorism: "The weaknesses and lack of preparedness exposed by this pandemic provide a window onto how a bioterrorist attack might unfold – and may increase its risks. Non-state groups could gain access to virulent strains that could pose similar devastation to societies around the globe."

The pandemic has brought changes to all aspects of our live. Due to circumstances caused by the coronavirus pandemic, UNOCT successfully moved to a virtual format and held several events, including the UN Virtual Counter-Terrorism Week from 6 to 10 July 2020 under the theme of "Strategic and Practical Challenges of Countering Terrorism in a Global Pandemic Environment," which became one of the first major events marking the 75th Anniversary of the United Nations. During the CT week, the Interactive Discussion on Emerging Threats: Responding to the Threat of Bio and Cyber Terrorism, moderated by Ms. Izumi Nakamitsu, Under-Secretary-General and High Representative for Disarmament Affairs, was held. At the event, the Member States as well as INTERPOL, the UN Food and Agriculture Organization (FAO), the UN Office for Disarmament Affairs (UNODA) and the World Health Organization (WHO) agreed that the pandemic increased the risk of bioterrorism. Pandemics and epidemics, such as Ebola for instance, present an opportunity that may inspire terrorist groups to perpetrate biological attacks at the time, when countries are acting in a protracted crisis.

The COVID-19 pandemic also tested our national and international emergency preparedness and response mechanisms that could be activated if there is a biological attack. The UNCCT being a capacity building agency can help Member States to increase their capabilities and move to an awareness raising mode. Please, find more information on the United Nations Virtual Counter-Terrorism Week in the report:
https://www.un.org/counterterrorism/sites/www.un.org.counterterrorism/files/20201104_virtual_ct_wk_visbility_report.pdf

The Virtual Expo on UNCCT and its impactful capacity-building work was organized within the framework of the UN Counter-Terrorism Virtual Week. Our Programme produced 4 videos to raise public awareness and understanding of how biotechnology could be misused to produce new strains of viruses with the intention of perpetrating terrorist attacks. The video of a scenario of the biotechnology misuse shows what happens if a terrorist group tries to push a scientist to alter the genetic sequence of a virus, create a dangerous disease, and unleash a pandemic again (http://webtv.un.org/watch/player/6168956643001). We work on these kinds of scenarios, analyze how technology could provide a solution but at the same time how it could be misused throughout our Programme in collaboration with other UN entities. The report on this work will be issued in summer 2021.

Also in July 2020, UNICRI and UNCCT held a webinar entitled COVID-19 and Future Pandemics: the Spectre of Bioterrorism. The webinar discussed the threat of bioterrorism during the on-going COVID-19 pandemic (deliberate transmission), as well as bioterrorism as a potential source of origin for future pandemics (deliberate release), and analyzed how technology could help to identify the origin of disease outbreaks and to model and forecast the spread of infectious disease, actions that are essential to understanding whether there has been a deliberate release by terrorist groups and how the outbreak is likely to evolve. The event was organized within the framework of UN Global Counter-Terrorism Coordination Compact Working Group on Emerging Threats and Critical Infrastructure Protection project on Technology and Security: Enhancing Knowledge about Advances in Science and Technology to Combat WMD Terrorism. The report on the project will be issued in summer 2021.

UNOCT AND UNCCT COUNTERING BIOTERRORISM

In November 2020, UNCCT and INTERPOL launched a joint initiative to produce a Global Threat Study on Non-State Actors and Their Potential Use of Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) Materials. By developing strategic threat assessments against CBRNE using national law enforcement information, this five-year initiative will help the international community counter the threat posed by non-state actors' access to CBRNE materials. The initiative will leverage national law enforcement information to develop strategic-level regional threat assessments and look into groups of malicious non-state actors which have been involved in sourcing, smuggling, acquiring, deploying or attempting to deploy CBRNE materials. The study will implement a phased regional approach (Middle East and North Africa, South East Asia, Sub-Saharan Africa, Western, Central, and Southern Asia, the Americas) issuing early reports. The launching event revealed the incidents of concern, among which: attempts at deliberate COVID-19 contamination through direct human-to-human contact in the first half of 2020; a plot of surface contamination with COVID-19 against law enforcement in Tunisia also foiled in April 2020; ricin letters sent to the U.S. President and law enforcement agencies in September 2020. The first report for this project on the Middle East and North Africa will be issued during the summer 2021.

The UNCCT is implementing 20 CBRN capacity-building courses. The courses related to countering Bioterrorism are: Countermeasures Course, Bio Incident – Table-Top Exercise, Bio Threats Courses, Outbreak containment for law enforcement, CBRN Law Enforcement Training Curriculum and Critical Infrastructure Protection. As an example, on 5 April 2021 the Programme will start a four-day Virtual Training on Outbreak Containment for Law Enforcement, with a focus on bioterrorism for Iraq. 40 participants from 13 Iraqi national agencies got an overview of the bioterrorism threat, a role in responding to public health emergencies, guidance on the health risk posed to law enforcement officers, strategies to mitigate risk, and engaged in exercises and case studies.

Since November 2019, UNCCT and the United States Department of State have been co-implementing a project on Chemical and Biological Preparedness and Response in Iraq, which involves government, academia, and industry. The project includes the following activities: Conference on chemical and biological security culture, Workshop on CB clandestine mobile laboratories, National Biosecurity Strategy and Training on biological response.

UNCCT and the North Atlantic Treaty Organizations (NATO) are co-implementing a project on CBRN preparedness and response in Jordan. The project was launched in March 2019 with a high-level opening at the UN Headquarters. It includes the following activities: Workshops on Self Assessment and Senior Leaders, Workshop National Response Plan on CBRN terrorism, Training on CBRN response, Field and Virtual Reality Exercise, High Level Conference to present results.

UNCCT and the Organisation for the Prohibition of Chemical Weapons (OPCW), in coordination with INTERPOL, UNICRI, the UN Office for the Coordination of Humanitarian Affairs (UNOCHA), UNODA, and WHO, implemented the third phase of a project on Ensuring effective inter-agency interoperability and coordinated communication in case of chemical and/or biological attacks. Phases I and II included a gap analysis, table-top exercises, and recommendations, while Phase III focuses on implementation of those recommendations. The report on the project can be found at: https://www.un.org/counterterrorism/sites/www.un.org.counterterrorism/files/uncct_ctitf_wmd_wg_project_publication_final.pdf.

UNCCT remains committed to assisting Member States to prevent CBRN terrorist attacks and promoting inter-agency collaboration to guarantee that such a calamity never takes place. We will continue to work with Member States and international organizations to ensure that prevention, detection, preparedness and response capabilities are firmly in place. Through this type of effective cooperation and partnership, we hope to provide a collective response to this global challenge.

V. COMMENTATORS' REMARKS

This section of the Report consists of presentations made by the commentators at the special Forum: "Combating Biological Threats: A Legal Agenda For Future National And Global Strategies" that was held on March 31st, 2021 via Zoom conferencing. Some updates and revisions were made by the invited participants.

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First, I want to start off by commending Yonah, Don Wallace, and everybody involved in this truly outstanding program. Yonah asked me to be a commentator and on past programs he had me go first. Since I am going last my first thought was "well I'm just going to summarize some of the broad conclusions" but I can't do that. My real temptation here is to spend my three to five minutes applauding everyone who just did a great job. Bravo. It was an honor to be here.

Now, John Moore, who's been my best friend for I guess since about 1974 and as he mentioned we did some calculations on the Covid fatalities in the United States versus the losses we suffered in every war since the country was founded, and I would only add that the Covid-19 fatalities occurred in a single year. This has been a devastating loss. I've been listing some commentators on TV sort of downplaying it. Now, in 2020 it was the third highest cost of life behind heart disease and cancer.

I used to think of myself as an expert on biological and chemical weapons. I started this over 50 years ago as an Army Recon Platoon Leader in Schofield Barracks, Hawaii, when somebody above me was assigned with picking someone to attend a two week chemical, biological, radiological warfare school and I guess I did something such as taking his parking place or something like that, so I got the job and as it turned out I enjoyed it and I actually got into sort of a contest with a marine captain who said he was going to be #1. So, I studied and I wound up being the honor graduate.
When I got to Vietnam, because I had some background on Vietnamese communism, they detailed me to work out of the special projects office of the North Vietnamese Affairs Office in the US embassy in Saigon. I spent a lot of time in the field investigating terrorism incidents but as far as I can tell the only use of bugs by the Viet Cong was using scorpions and hornets as booby traps to make the lives of American soldiers a little bit less pleasant.

Things have changed a lot in terms of the threats listed in this group. I am reminded of the story of the gentleman who lived through the 1889 Johnstown flood in Pennsylvania and he spent most of the rest of his life traveling around giving lectures to Kiwanis clubs, Rotary clubs, and the like about what the great flood was like. He finally passed away and he went to heaven and Saint Peter did an interview with him and he said, "Did anything happen in your life that was particularly noteworthy" The man said, "well yes actually. I lived through the Johnstown flood." Saint Peter said, "you know we have a lunch group that gets together once a week and I know they'd love to hear you make a presentation on your memories next Wednesday. I'm sure they would love it." The man said he would enjoy doing that and Saint Peter got up and introduced him. As he walked up onto the stage Saint Peter nodded and said, "you see that old guy with the beard in the corner?" The man said, "yeah" Saint Peter said "well that's Noah."

In this group, I am not an expert and I'm not going to spend a lot of time talking about biological warfare. I do want to mention one thing because we have natural causes, we have accidental causes, and we have a tremendous risk of intentional man-made bioterrorism. Back in the 20th century, Al-Qaeda was playing around trying to get ricin and anthrax and other toxins and we have groups in this country on the right and the left who would love to be able to cause some real serious damage because they're so angry. One of the things that I have drawn from my decades working in this business is: deterrence is based upon perceptions of strengths and will but if most rational human beings pursue their perceived self-interest.

As John Moore can tell you I'm not a Donald Trump fan, but if we did not care about the law or morality his comment that we would respond to terrorist attacks by killing the friends and relatives of the terrorists was right on because that's something they would care about. If they thought if I blow myself up for my cause, all my relatives will die and that would be a factor. But obviously we're not going to do those things because we're not like that. What we ought to be doing, it seems to me, is trying to assess the potential threats and what they care about, what they value, what they fear, and persuade them in advance that if they engage in a biological threat or any other kinds of terrorism, we need to convince them that when all the smoke has cleared that no matter how much damage they do in the end the things they believe in will be worse off than they were in the beginning.

We've had American terrorists go to churches and murder people; we've had bombings, all sorts of things. There are countries in the Middle East that would love to, and do, attack Israel and if we could convince them that if they attack a black church or a Jewish synagogue or Israel that the world community is going to unite and in the end their targets and the causes their targets represent are going to be much better off than they were beforehand. You fire a missile into Israel and the world community is going to greatly increase Israel's defense budget.

Again, even terrorists can make rational decisions. They may have different perceptions of what's important and so forth but they have reasons for doing these things and I think we need to be understanding first of all that these things are done by individuals. They may lead organizations but decisions are not made by groups as often as they are made by individuals and those individuals have values, interests, and so forth and the more we can work to understand them, and to persuade them that it is not in their interest short or long term to engage in this type of behavior, the more likely we are to deter them.

Beyond that, the only other thing is I was looking through a January 2018 report that the International Center for Terrorism Studies did and this was a time when most Americans were not thinking about pandemics, but Yonah Alexander concluded his opening remarks, "in sum, the globalization of pandemic outbreaks of deadly infectious diseases are only a matter of time." Well that time has come. We've seen it. It has incentivized some bad guys to want to play in this area as they see how destructive it can be. Hopefully it will incentivize the good guys to understand the threat and to work together to try to find solutions and I don't know of a better comparable group than the sponsors of this group to go take on that role and I very much hope that the end product of this, the video and also the publication, will get very wide readership around the country and the world.

DR. NICHOLAS ROSTOW,
Senior Research Scholar, Yale Law School

Thank you Yonah and Don. It's wonderful to be with this group again. I realize our relationship goes back to 1985, if not earlier, so it's getting to be a long time ago. I'll start at the end. Bob Turner's remarks remind me of when I went to work for Abe Sofaer in the summer of '85 and was sent off immediately to debate an upstate-New York FBI agent on the administration's response to terrorism. I was provided talking points but, of course, in the Reagan administration you didn't need any talking points. The position was clear: "they can run but they can't hide and we don't negotiate with them." The FBI agent got up and said, "Well, of course we will negotiate with them and encourage families of victims who've been kidnapped in South America to pay ransom." It was a very infuriating but enlightening moment.

I think there are just a couple of things I'd like to pick up on because I think there are common themes in the remarks of everyone who's spoken before me. One is the tremendous need for process. Bring senior government lawyers at the national, state, local, and Federal levels together to work pandemic preparedness and process. This need goes beyond national borders. One of the things that was severely lacking as far as the public was concerned was international cooperation and it wasn't clear that the United States was cooperating and working with its friends and allies much less through agencies at the UN. Of course working through the UN has its frustrations and limitations and you need a lot of imagination. That's why Abe Sofaer's idea is so attractive to try and take the national security dimension out of the equation, if it is possible to do so, so that international agencies can work more effectively. But I think part of the legal strategy has to involve process. I just think one of the lessons identified and learned from the response to COVID-19 has to be the need for enhanced process.

The second problem, which is the 800 pound gorilla in the room, is the COVID exacerbation of the U.S. political system. The President and opposition made the COVID response political. It should not have been. In addition, both political parties in recent decades have demonstrated a shortage of leaders willing to stand for the national interest and general welfare. The parties have thrown up their hands, in front of budget deficits, for example, as if they did not matter. It is as if both parties have said, "well, we don't know what to do about them, so we're going to say they don't matter." A friend of mine wrote an article called, "The Great Disappearing Superpower," about how the cost of the pandemic essentially eliminated the United States as a superpower. Just bankrupted it. I don't know if that's going to prove to be the case but it's a serious question in my mind and it's going to mean that the resources available for combating trans-national health problems like the coronavirus, much less more conventional problems, we're going to come up will be in short supply.

The final point I'd like to make is where Jennifer Buss began on the Florida Water supply. One of the things that I've always thought we were incredibly lucky about is that our nuclear weapons systems are not computerized, and the New York City water supply is not computerized, and therefore they are not vulnerable to computer attacks. It sounds as if Florida isn't so lucky, and those who want to modernize our nuclear weapons arsenal probably want to do it with computers. The protocols for computers were not designed with security in mind, and therefore anything connected to the Internet is extremely vulnerable. I think the point is relevant also in the area of biological and health threats. I'll avoid getting into whether or not the COVID was a Chinese weapon that escaped a lab. I was in the government as Abe was when Sverdlovsk happened, which was a Soviet anthrax weapon that escaped into the atmosphere and killed at least 10,000 people if not more.

In my view, process is essential to getting anywhere in national and international pandemic preparedness, which is essential if we're going to meet the next pandemic with greater success than we met this one.

VI. QUESTION AND ANSWER DISCUSSION

Selected comments by the contributors to this report during the discussion following the presentations. Some of the invited attendees from the United States and internationally participated during this segment.

PROFESSOR DON WALLACE, JR.

Bob and the others know that these panels become richer and richer and cover more ground. Rita has inspired us for really this year. I don't think she ever knew should be falling in with so many nonscientists because of her views about science. I would like to speak up a little bit about what Abe said. Why is there not more enthusiasm for international solutions? I think the answer is because America fell by the wayside. Why have we fallen by the wayside? Putting to one side politics, I think we've gotten tired. I think we've gotten too sophisticated and maybe we're driven by idealism actually by innocence as we came out of World War II. That was probably the engine which drove the world. Can we come back? Nick was talking about costs. I think not only can we but we must and I think we will. There's no alternative. The question of how you deal with China Russia well, we'll see how we deal with China and Russia. I think we just have to keep our eye on the ball, engage, and drive forward. One has to be specific but we're talking at the global level where Abe was specific, even though he's talking about another regime that doesn't exist yet. He was describing what it should include or might include what it should not. I think we have to restore our faith in ourselves. I think we have it and I think we will go will go forward. I think probably none of us was an admirer of the last chief executive and I think the worst thing is that he led many of us to question America's capacity and ability to move forward. I think it's much bigger than any individual. This is a country with enormous moxie, drive, individualism, and individuals. John pointed out talking about public-private-partnerships with respect to a particular aspect. I think this is going to happen and we just have to do it. The old joke that is endlessly told now about the discussion between Henry Kissinger and Zhou Enlai. Kissinger asked Zhou Enlai, “what do you think about the French Revolution?” Zhou Enlai said, “it's too early to tell.” But it’s surely too early to tell what would be like in two or three years from now. I think it will be profoundly different in mood and we will have to tackle these issues. Then we'll have to prioritize as one always has to do, and there are many people that specialize in how we prioritize when you have many problems any many possible solutions. As was my daughter once said, “you can either be an optimist or a ‘pepper mist’ and I think we have to be optimists with reason.

PROFESSOR YONAH ALEXANDER

In terms of your own assessment as to the outlook and the threat to humanity, how would you rank for example the climate challenge and also the Mother Nature infectious diseases and man-made? In terms of one to three or are they mixed together?

PROFESSOR RITA COLWELL

The debate is whether the COVID-19 virus escaped from a laboratory in Wuhan, China, or is the result of a natural transmission from an animal source, such as bats. However, the greatest threat to human health is ourselves. The global human population is predicted to increase from seven billion to 10 billion within the next few decades. This means humans increasingly are encroaching into the territories of animals like bats, and destroying pristine environments such as the forests of the Amazon. These activities expose us to pathogens to which we have no immunity, namely the COVID-19 virus. The COVID-19 virus is a member of the virus family that includes the influenza virus. We have become adapted to influenza viruses, receiving booster shots for protection against its variants. That is what is likely to be necessary for COVID variants. I should point out that bats carry many viruses so there are some future surprises, no doubt, to come from bats. How does one compare the outcome of the release of a natural versus a man made, that is, engineered virus? If research done in a laboratory was to build a virus to be more lethal, with a deliberate release, there are genomic methods to detect the modification. The outcome of a naturally occurring virus to which humans have no immunity is a global disaster, as we now know from our experience with the COVID-19 SARS 2 virus.

PROFESSOR YONAH ALEXANDER

I think your suggestion or recommendation to undertake perhaps an “Apollo project” approach. Some are calling for a “Manhattan approach” in other words, maybe ‘out of the box’ so that the terrorists would think twice or ten times before they use a weapon if they know what society can do to reduce the risk. In other words your suggestion for private-public partnership in this area is the “best practices” strategy?

PROFESSOR JOHN NORTON MOORE

I think it's essential that in addition to doing much better at the usual things, and I would endorse strongly the Council on Foreign Relations Report, the points that Rita's making, we want to do those things, but it's not enough. This risk is far greater than that. It's too big. The effect on the whole world is so great and it's too unpredictable. We're seeing new versions of this in the first six months that are all already coming out and there's no reason to believe we're not going to continue to have new variants of Covid-19 that hopefully we'll have protection from existing vaccines but maybe that protection level will go down dramatically maybe for certain it won't even be there. So we need to do more, we need to utilize another thing that's been going on, which is Covid-19 has shifted a huge amount of the medical research budget to looking at things like COVID-19, and Influenza, and vaccines, and antivirals and because to that we also to have such a program at this time have an advantage going for us in terms of what the medical community is already working.

PROFESSOR DON WALLACE, JR.

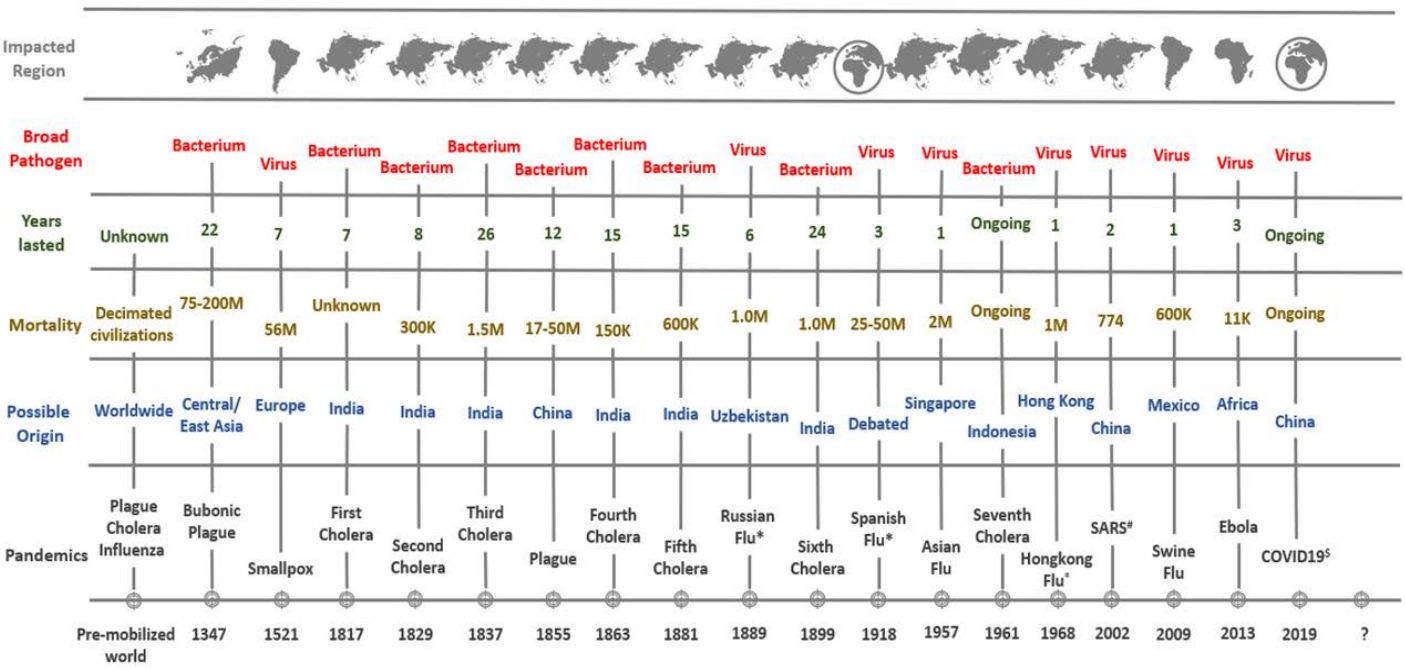
Both Abe and Nick, in particular, spent time at the UN. Abe referred to the UN. We have a tendency to look down at it with some reason. on the other hand, it's a game in town and is one that the Russians and the Chinese like. It is probably one place where we have many more in spite of everything. I've been a delegate to the UN for over 40 years in technical legal areas where we have a lot of support if we seek it. In the last few years, I think we've just basically hidden our light under a bushel. We're weak. We're not vigorous. We're not daring. There's no reason we can't be and when we are daring, I think Abe is correct that people around the world are not all enemies by any means. A lot of them are muddled, they're confused, they're weak, and they certainly look up to us. Some are disappointed by us and you have to pick those areas pushing as hard as you can and I agree weapons are something else. Everyone is worried about that health for God's sake. This country is the source of more solutions to health problems probably more than any nation in history times two. I mean my wife said that Britain has been good. Science in America and where these vaccines come from, of course they come from years of research, I understand. So, I mean we just have to run with this and back to Bob Turner's point and actually Nick's I mean yes we could bankrupt ourselves but I'd rather be enthusiastic and lose a little bit of money then not be enthusiastic and let the world just drift on as it has been drifting clearly and drifting into rather unhealthy, if I may use that word, direction.

PROFESSOR ROBERT TURNER, SJD

We have a problem. I was born during World War II and most of us who grew up with a tremendous love for this country. As I look around today, our schools are producing people that don't like America, that don't want America to play a leading role because they think what we do is bad. I don't know the answer to that, but if we're going to keep doing good, we're going to have to address that issue and try to make sure that young Americans understand how really incredibly good this country has been and again I toss it out but I don't have an answer for it.

PROFESSOR YONAH ALEXANDER

We can continue to discuss different lessons. Again, on a personal professional level, I recall for years the work of the International Committee of the Red Cross [ICRC] dealing not only with protecting the victims of war but also moving into protecting the victims during peace time. I recalled that we had for maybe two decades the seminars and meetings in Geneva discussing some of these issues to actually broaden the challenges not only in times of war but in times of peace and it takes a great deal of education and communication. Hopefully, we can focus on some of these issues in the coming weeks and months. I think we're planning to have an event at the end of April perhaps on the issue of communication and the role of the media and social media and so forth. We will try to keep in touch with you and at this point we will conclude our discussion.



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*Source of virus debated, hence used prevalent name of disease, #SARS-CoV-1, $SARS-CoV-2

VII. ABOUT THE EDITORS

PROFESSOR YONAH ALEXANDER is the Director of the International Center for Terrorism Studies (at the Potomac Institute for Policy Studies) and the Inter-University Center for Legal Studies (at the International Law Institute). He is a former Professor and Director of Terrorism Studies at the State University of New York and the George Washington University. Professor Alexander also held academic appointments elsewhere such as American, Catholic, Chicago, Columbia, and Georgetown's Center for Strategic and International Studies (CSIS). He has published over 100 books and founded five international journals. His personal collections are housed at the Hoover Institution Library and Archives at Stanford University.

PROFESSOR DON WALLACE, JR, Yale University BA, Harvard University, LLB, is a Professor of Law at Georgetown University as well as Chairman of the International Law Institute. He is a US delegate to UNCITRAL, vice president of the UNIDROIT Foundation, a member of the American Law Institute, and the former chairman of the International Law Section at the. American Bar Association. He is also the author and co- author of several books and articles.

VIII. ABOUT THE CONTRIBUTORS

DR. JENNIFER BUSS earned her B.S. in Biochemistry with a minor in Mathematics from the University of Delaware, and a Ph.D. in Biochemistry from the University of Maryland. She has served as Assistant Vice President, Vice President, then in 2018, was promoted to President of the Potomac Institute. Since joining the Institute as Senior Fellow in 2012, Dr. Buss has written and won numerous proposals, created several new centers and is in charge of all day-to-day business and operating functions of the Institute.

PROFESSOR RITA COLWELL is a pioneering microbiologist and the first woman to lead the National Science Foundation. She is a Distinguished University Professor at both the University of Maryland and Johns Hopkins University's Bloomberg School of Public Health and has received awards from the Emperor of Japan, the King of Sweden, the Prime Minister of Singapore, and the President of the United States. Her interests are focused on global infectious diseases, water issues, including safe drinking water for both the developed and developing world. She is a nationally recognized scientist and educator, and has authored or co-authored 16 books and more than 700 scientific publications. She produced the award-winning film, Invisible Seas, and has served on editorial boards of numerous scientific journals. She is the author of the highly acclaimed book A Lab of One's Own (Simon & Schuster).

PROFESSOR JOHN NORTON MOORE recently retired from the University of Virginia where he has served on the faculty since 1966. There Moore taught the first course in the country on national security law and conceived and co-authored the first casebook on the subject. Throughout his career, Moore has held many government positions, including the principal legal adviser to the Ambassador of Kuwait to the United States, six presidential appointments, Chair of the National Security Council Interagency Task Force on the Law of the Sea, and Counselor on International Law at the U.S. Department of State. In addition, Moore is a member of advisory and editorial boards for nine journals and numerous professional organizations, including the Woodrow Wilson International Center for Scholars at the Smithsonian. He has published numerous articles on oceans policy, national security and international law.

PROFESSOR ABRAHAM SOFAER was appointed the first George P. Shultz Distinguished Scholar and Senior Fellow Emeritus at the Hoover Institution in 1994 following a career that spanned academia, government, and the private sector. From 1967 onwards, Sofaer has worked as an assistant US attorney, a US district court judge, a professor at Columbia University School of Law, a legal advisor at the US Department of State, and a private lawyer at Hughes, Hubbard, and Reed. Sofaer's work focuses on war powers within the US government and issues related to international law, terrorism, diplomacy, and national security. A veteran of the US Air Force, Sofaer received an LLB degree from New York University School of Law in 1965, where he was editor in chief of the law review. He holds a BA in history from Yeshiva College (1962). He is the author of several books, the most recent of which is Taking on Iran: Strength, Diplomacy, and the Iranian Threat (Hoover Institution Press, 2013).

HON. MARIA EUGENIA DE LOS ANGELES RETTORI brings more than 12 years of experience working at the United Nations. She works at the United Nations Counter-Terrorism Centre (UNCCT) within the United Nations Office of Counter-Terrorism (UNOCT) in New York. She heads the unit on Preventing and Responding to Weapons of Mass Destruction (WMD)/Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism, overseeing its global programme of work and the implementation of several projects in support to the United Nations Global Counter-Terrorism Strategy. Prior to this, Ms. Rettori worked at the United Nations Interregional Crime and Justice Research Institute (UNICRI) implementing the European Union CBRN Risk Mitigation Centres of Excellence Initiative. She worked both at the strategic and project level from both Headquarters and as Regional Coordinator for South East Asia based in Manila, supporting partner countries in the development of CBRN National Action Plans and in the implementation of capacity-building projects. Ms. Rettori is a licensed Lawyer with the Bar Association of Spain and holds a certificate in Counter-Terrorism Studies from the University of St. Andrews in the United Kingdom.

IX. ABOUT THE COMMENTATORS

PROFESSOR ROBERT F. TURNER, SJD holds both professional and academic doctorates from the University of Virginia School of Law. He co-founded the Center for National Security Law with Professor John Norton Moore in April 1981 and has served as its associate director since then except for two periods of government service in the 1980s and during 1994-95, when he occupied the Charles H. Stockton Chair of International Law at the U.S. Naval War College in Newport, Rhode Island. A former Army captain and veteran of two tours in Vietnam, Turner served as a research associate and public affairs fellow at Stanford's Hoover Institution on War, Revolution and Peace. He has also served in the executive branch as a member of the Senior Executive Service, first in the Pentagon as special assistant to the undersecretary of defense for policy, then in the White House as counsel to the President's Intelligence Oversight Board, and at the State Department as principal deputy and then acting assistant secretary for legislative affairs. In 1986, he became the first president of the congressionally established United States Institute of Peace.

DR. NICHOLAS ROSTOW is a Senior Partner with the firm of Zumpano, Patricios & Popok PLLC in New York, NY. He also is a Senior Research Scholar at the Yale Law School. Dr. Rostow has held numerous academic and government positions throughout his career, including the Charles Evans Hughes Visiting Chair of Government and Jurisprudence at Colgate University, The Vice Chancellor for Legal Affairs at the State University of New York, Senior Policy Adviser to the U.S. Permanent Representative to the United Nations, Counsel and Deputy Staff Director to the House Select Committee on Military/Commercial Concerns with the People's Republic of China, Special Assistant to Presidents Reagan and George H.W. Bush for National Security Affairs, and Legal Adviser to the National Security Council under Colin Powell and Brent Scowcroft. He earned his B.A., summa cum laude, from Yale in 1972, and his Ph.D. in history and J.D., also from Yale. His publications are in the fields of diplomatic history, international law, and issues of U.S. national security and foreign policy.