# CP – Unilat

## 1NC

### AI

#### Text: The United States federal government should substantially increase funding for research, development, and implementation of [insert].

#### R&D funding solves

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Greater investments in AI R&D are essential to maintaining American leadership in AI. Throughout the 20th century, the federal government played a critical role in fueling technological innovation by funding pivotal basic research. Government funding was essential to developing the transistor, the Global Positioning System, and the Internet—inventions that transformed the world economy. Yet over the past several decades, federal government spending on R&D as a percentage of GDP declined from about 1.2 percent in 1976 to around 0.7 percent in 2018.[3](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn3) This is a worrisome trend as the federal government remains the main funder of basic research.[4](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn4) Government support again could be pivotal both in fostering new AI breakthroughs and ensuring that the U.S. government has access to those breakthroughs.

U.S. government entities already are pursuing important AI R&D initiatives. The National Science Foundation funds an array of basic research and partners with stakeholders across government, academia, and the private sector to foster advances in the field.[5](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn5) The National Institutes of Health are incorporating deep learning to improve disease screening and natural language processing for information retrieval and discovery.[6](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn6) In 2018, the Defense Advanced Research Projects Agency (DARPA), the Department of Defense organization charged with developing emerging technologies, launched a $2 billion multi-year campaign to incentivize the creation of a range of new AI capabilities and applications.[7](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn7)

Unclassified federal government spending on defense AI R&D in FY2020 will be about $4 billion, according to a Bloomberg analysis from March 2019.[8](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn8) In September 2019, the White House announced an FY20 non-defense AI R&D budget request of nearly $1 billion.[9](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn9)

In contrast, the level of Chinese government spending on AI R&D is not clear. Complete annualized figures for Chinese government spending are not publicly available. Instead, only announcements of planned, multi-year spending offer a window into the scale of overall government R&D spending at the national, provincial, and local levels.[10](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn10) For instance, two Chinese cities alone announced the creation of RMB 100 billion (approximately $15 billion) multi-year AI development funds while Beijing unveiled plans for a $2 billion AI research park in 2018.[11](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn11)

The United States enjoys robust private sector R&D funding. Precise figures are hard to discern because companies typically do not divulge details for R&D expenditures in their financial statements and privately owned firms do not have such reporting requirements. That said, looking at overall R&D expenditures by major AI-intensive companies gives a sense of the scale of private investments in AI R&D. The combined 2018 R&D expenditures by U.S. firms Alphabet, IBM, Facebook, Microsoft, and Amazon was $80.5 billion.[12](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn12)

China’s tech giants also report significant R&D investments, although they are considerably smaller than those of their U.S. counterparts. Leading Chinese AI firms Alibaba, Baidu, and Tencent collectively spent $9.1 billion on R&D in 2018.[13](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn13) These firms are also major investors in Chinese AI startups.[14](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn14)

In contrast, Europe is a laggard. Combined R&D spending by the EU (national governments and private investments) is projected to be EUR 20 billion (approximately $22.1 billion) in 2020, up from about EUR 3.7 billion (approximately $4.1 billion) in 2016.[15](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn15)

The United States’ dominant position in startup funding, a key driver of technological innovation, is starting to erode. In 2017, the U.S. share of global AI startup funding was less than half of the world’s total—ceding the lead to China—for the first time ever.[16](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn16) This happened despite venture capital funding of American AI startups growing at a 36 percent compound annual growth rate since 2013.[17](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn17)

Figures are clearer for all national R&D spending, beyond simply AI, and indicate worrisome trends. Other countries are outpacing the United States with faster growth of their national R&D budgets. Total U.S. national (public and private) R&D expenditures as a share of GDP have been mostly stagnant since 1996. China quadrupled its R&D expenses as a share of GDP over the same time frame, and countries like Israel and South Korea also significantly ramped up spending.[18](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn18) As a result, the U.S. share of global R&D has declined over the past several decades, falling from 69 percent in 1960 to 28 percent in 2016. From 2000 to 2015, the United States accounted for 19 percent of global R&D growth, while China accounted for 31 percent.[19](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn19) China is on track to top the United States in total R&D investments (in purchasing power parity-adjusted dollars) as soon as 2019.[20](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn20)

R&D is a key driver of long-term economic growth.[21](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn21) The Congressional Budget Office reaffirmed in 2018 that federal R&D spending is a positive influence on private R&D spending and increases macroeconomic growth.[22](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn22) Authors of a ten-year study of 28 EU economies concluded that a 1 percent increase in R&D expenditure as a percentage of GDP would cause an increase of real GDP growth rate of 2.2 percent.[23](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn23)

The United States gains further benefits from federal R&D spending through effective technology diffusion. Technology transfers from the public to the private sector are stipulated in several laws.[24](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn24) This legislation gives ownership and title to federally funded research by universities and small businesses and has resulted in thousands of spin-off companies, increased technology transfer, and greater innovation.[25](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn25) Under these laws, the U.S. receives government royalty-free access to the research.[26](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn26)

### Biotech

#### Text: The United States federal government should substantially increase funding for research, development, and implementation of [insert].

#### New biosecurity measures solve

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During the analysis of U.S. biosecurity and biodefense policy, several capability, implementation, and infrastructure gaps were identified. That is, goals which are plainly stated in biodefense legislation, presidential directives, or other policy instruments, are found to be associated with few implemented programs or actions. These gaps include: • Capability Gaps: o Microbial forensics is an underinvested field in the United States and internationally, but could be enhanced by leveraging technologies such as bioinformatics and next generation sequencing. Two U.S. government policies highlight the need for microbial forensic capabilities: HSPD10/Biodefense for the 21st Century (2004) and the National Strategy to Support Research in Microbial Forensics Attribution Investigations and National Security (2009).(56, 57) These strategies, along with recent reports completed by the National Academies of Science, Engineering, and Medicine and the Government Accountability Office can help define nearterm recommendations for addressing this gap. Leveraging new biotechnologies may enhance capabilities for microbial forensics at a lower overall cost and/or higher throughput than traditional forensics methods. o Systems for scanning scientific advances that could lead to new technology developments exist in offices that support or conduct research and advanced development. However, end-users often do not have access to these systems or have similar systems of their own, which limits field application and relevance to biodefense activities. o Despite significant investment in biosurveillance approaches and platforms, the underlying data used to develop effective early warning methods is highly variable and uncertain. This challenge suggests a gap in robust approaches for generating reliable, curated input data. In addition, this challenge highlights the lack of communication and interaction between scientific experts and policy-makers, which may be needed to ensure that existing, verified data is included in the decision-making process of preparedness activities and potential emergency situations. o The increasing convergence of scientific disciplines, changing funding paradigm, and expansion of biotechnology practitioners suggests that greater attention is needed on evaluating the security implications of biological and biotechnological advances and applications that are not only focused on pathogens and toxins. In 2014, the American Association for the Advancement of Science, FBI, and United National Interregional Crime and Justice Research Institute published a report on the national and transnational security implications of Big Data in the Life Sciences. This report acknowledged the increasing production of genomic data by research, clinical, and direct-to-consumer organizations throughout the world; the continuously advancing computational and data science capabilities; and the frequency of cyberattacks of health care and insurance databases. This combination of factors led the FBI and others to evaluate more closely the potential national security risks presented by these activities and approaches for reducing the risks while not adversely affecting commercial, research, and clinical innovation. • Infrastructure Gap o Despite investment on basic research on pathogens, the academic research sector, including the biocontainment laboratories, are not considered a critical infrastructure and therefore, have little to no external financial or expert support to prepare for, respond to, and recover from potential events. However, the basic knowledge about pathogens are generated by this sector and the capabilities to identify newly-emerging or never-beforeseen pathogens are resident within this sector. o Very few policies and programs exist for promoting resiliency in the biodefense, health, and research sector. But, resiliency is a local issue, which suggests that the federal government role may be in facilitating preparedness, planning, and recovery efforts. No policy appears to include outreach efforts to the scientific community to promote resiliency. o Although the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 includes a section on support for applied biosafety, very little, if any, funding has been appropriated for research to generate the data needed to evaluate effectiveness of biosafety measures. • Implementation Gap o Several sectors and organizations do not have sufficient funds to support compliance with biosecurity regulations so they choose not to participate in activities involving restricted agents. The most significantly affected sectors are public health and veterinary diagnostic laboratories, which require external funding and technical support to maintain compliance with the Biological Select Agents and Toxins (BSAT) Regulations. o The continuous changes to the BSAT Regulations have resulted in significant challenges and delays in federal implementation and local compliance. Although federal regulators previously have met with the regulated community to discuss changes to federal BSAT policies, these outreach activities seem to have ended. Instead, the Federal Select Agent Program directors have initiated new efforts that involve interaction and engagement with local Federal Bureau of Investigation Weapons of Mass Destruction Coordinators. o Practical resources for enabling program managers, research reviewers, and scientists to assess the risks and benefits of research do not exist. These resources would ensure that science and technology investments for promoting biodefense and health security objectives can be leveraged maximally while risks are addressed adequately. o Annual and inconsistent investment in nonproliferation activities, specifically for cooperative threat reduction programs, limits long-term sustainability of partnerships and outcomes. Threat reduction or bioengagement programs require long-term planning, engagement, and funding to increase the likelihood of sustainability of activities (e.g., through financial support of the recipient country), enabling an exit strategy for U.S. government funding. o Effective measures for evaluating biosecurity policy implementation have not been developed. Members of the scientific and security community routinely have stated that the development of measures are not feasible because measuring the absence of an event (i.e., measuring a negative result) is impossible. Conversely, measures for evaluating some biodefense investments do exist, each different from another. This variability highlights inconsistencies that may arise from the different, often ad hoc evaluation metrics used to assess biodefense investments. o No analytic framework currently exists for assessing opportunity costs of biosecurity policy. Often direct costs are calculated in advance as part of regulatory impact assessments. But, indirect costs and downstream consequences, which represent opportunity costs of a policy, resulting from these direct costs are not calculated. However, many in the regulated community use arguments about opportunity cost when engaging in policy discussions, highlighting the importance of considering costs downstream of direct time and financial investments.

## 2NC

### General – Unilat

#### US policy alone is better

Bandow 19- Senior Fellow at the CATO Institute (Doug, “NATO No Longer Serves American Interests,” CATO Institute, 12-5-19, Accessed Online at <https://www.cato.org/commentary/nato-no-longer-serves-american-interests>, Accessed Online on 6-21-22)

Ultimately the alliance decided to expand its membership, even though the enemy had disappeared. Doing so violated multiple assurances given to Moscow. NATO also initiated “out‐​of‐​area” activities, which meant defending other than member states. This ironically turned the pact into an offensive instrument, first used to dismember Serbia in 1999. In essence, NATO had gone from a means to an end, with war the new means. Said Sen. Richard Lugar, then chairman of the Senate Foreign Relations Committee, the organization would “go out of area or out of business.” And, as public choice economists would predict, no one involved in the alliance wanted the latter. The Soviet Union’s collapse triggered European disarmament, which in turn intensified American demands for greater burden‐​sharing, which the Europeans continued to ignore. The process continued for years, demonstrating, perversely, that the less Europe did the more America would. Hence the bizarrely named “European Reassurance Initiative” after Russia’s intervention in Ukraine: the Europeans were essentially promised that even if they did nothing Washington would remain at their side—though whining all the way. U.S. policymakers appeared to accept the need to subsidize the Europeans in order to keep them dependent. Washington opposed any proposals for independent spending and action, preferring that Europe do more, but only under America’s direction. The alliance continued to add members. Most recently it accepted Montenegro, with North Macedonia awaiting treaty approval by the 29 current members. Next up, the Duchy of Grand Fenwick, featured in the novel The Mouse that Roared! The latest out‐​of‐​area wars have been distant, unconventional conflicts: Afghanistan, Libya, and Syria, of which the latter triggered French President Emmanuel Macron’s complaint about a lack of allied coordination. Some NATO fans call the organization a “global alliance,” presumably ready to act as global cop. In every case, of course, the heavy lifting inevitably falls on Washington. Every recent president criticized Europeans for failing to make sufficient contributions for the common defense. Defense Secretary Robert Gates suggested that the alliance itself was at risk, since “there will be dwindling appetite and patience in the U.S. Congress, and in the American body politic writ large, to expend increasingly precious funds on behalf of nations that are apparently unwilling to devote the necessary resources … in their own defense.” President Trump expressed similar sentiments, though more crudely. Alas, the burden‐​sharing debate is unproductive. The issue should be burden‐​shedding. Even when President Trump does the right thing, he does so badly. So it is with NATO. But the alliance’s “brain death” reflects its inherent problems, not his dreadful management. Quite simply, it makes no sense for U.S. taxpayers to subsidize the defense of nations capable of defending themselves. Shared interests will continue to justify military cooperation. However, the alliance as today constituted no longer serves American interests. NATO’s problems are many and fundamental. First, America and Europe no longer face an existential threat, let alone a common one. Which makes united action by such a diverse membership so difficult. Russia is no Soviet Union. Vladimir Putin is no Joseph Stalin. The Russian Federation is an unpleasant actor but has reverted to a pre‐​1914 great power, insisting on border security and international respect. There is no prospect of a Russian attack on the U.S. and little more chance of one on Europe, Old or New. Although plausible, even a successful grab of the Baltic States would yield little benefit for much cost. Russia’s, Europe’s, and America’s interests often clash—they understandably have different perspectives on economic predominance in Ukraine and political predominance in Syria, for instance—but most such issues are of only limited importance. Even the disputes over Georgia and Ukraine are peripheral matters for Europe and America. However, the latter is existential (in the case of the latter) security concerns for Russia. NATO expansion moved the transatlantic alliance a thousand miles eastward; Western‐​backed “color revolutions” placed unfriendly governments in neighboring states; Ukraine was heartland territory for the Russian Empire and the Soviet Union; and Crimea, transferred in 1954 to Ukraine as part of an internal Soviet political deal, contains the important Black Sea military base at Sebastopol. Moscow views its “near abroad” rather like Washington views Latin America. The U.S. officially does not believe in spheres of interest, but the Trump administration reacted badly to Russian involvement in Venezuela. The president said: “Russia has to get out.” Then‐​National Security adviser John Bolton announced: “We strongly caution actors external to the western hemisphere against deploying military assets to Venezuela, or elsewhere in the hemisphere, with the intent of establishing or expanding military operations.” Thus, Moscow’s behavior, though unjustified, is essentially defensive toward the West. That conclusion is backed by Russian military deployments. Mike Kofman of Harvard University’s Belfer Center argued: “Despite provocative air and naval activity concentrated in the [Baltic] area Russian forces base there are principally defensive, and aging to boot.” Despite increasing indications that the Putin government might be interested in reducing tensions over Ukraine, the allies have yet to offer the one concession that might cause Russia to moderate its behavior: the end of NATO expansion. Second, most Europeans don’t appear to fear for their security. Despite the public hysteria surrounding Moscow’s often unsavory behavior, few Europeans worry about Russia. The Baltics and Poland express a different perspective, yet their military spending, around two percent of GDP, remains paltry if they truly believe their independence to be at stake. The continent faces other modest security issues, primarily emanating from the Middle East and North Africa, but few are susceptible to a military response and none require a larger European military. France and the United Kingdom have greater international interests related to their colonial past, but even their willingness to intervene is declining. Earlier this year former U.S. ambassadors Douglas Lute and Nicholas Burns made the astonishing claim that NATO’s problems “represent the most severe crisis in the security environment in Europe since the end of the Cold War and perhaps ever.” More than in September 1939? August 1914? During the Napoleonic Wars and French Revolution? German Chancellor Angela Merkel was only slightly less hysterical in declaring: “Maintaining NATO today is even more in our own interest than it was in the Cold War—or at least as important as it was in the Cold War.” In fact, Europe may be more secure than ever before. Third, significant military spending increases—as opposed to incremental movement by some states toward NATO’s two percent objective—are unlikely. Even Secretary of State Mike Pompeo admitted that when he asks Europeans to do more, “they say ‘It’s tough. Our voters just really don’t like to spend money on defense’.” This is an eminently sensible response, given the absence of a serious threat and Washington’s oft‐​demonstrated determination to defend the continent, no matter what. As a share of GDP European military expenditures, last year ran 1.51 percent, the same in 2012. The future is not likely to be much better. Military spending by the continent’s small states has little impact on overall spending while the five most economically significant European countries range from awful to unimpressive. Most notably, Germany was at a dismal 1.23 percent of GDP last year. Moreover, the Bundeswehr’s readiness is terrible. Two years ago the Rand Corporation estimated it would take a month for Berlin to mobilize a heavy armored brigade. In January Bundestag Military Commissioner Hans‐​Peter Bartels reported that few of the Bundeswehr’s shortcomings had been fixed, despite increased expenditures: “There is neither enough personnel nor materiel, and often one confronts shortage upon shortage.” Having previously agreed to hit two percent in 2024, Chancellor Merkel now says Berlin will do so in the early 2030s. Even if her latest assurance was credible, her current coalition faces potential collapse and she might be out of office as early as next year. If the Left forms an upcoming government military outlays are likely to go into reverse. Fourth, the Europeans know that they can rely on the U.S. to act irrespective of how little they contribute to their militaries. For years Washington has whined, complained, demanded, begged, and insisted that its allies do more, without noticeable effect. Only Russia’s 2014 intervention in Ukraine triggered the beginning of a modest increase in European military outlays, which predates Trump’s demands. Even when he and past presidents insisted that America’s allies do more, their administrations have conducted business as usual and emissaries have visited Europe dedicated to “reassuring” even Europe’s laggards of Washington’s eternal commitment to defend the continent no matter what. Virtually every Trump appointee at State and Defense has undercut the president’s dramatic rhetoric by insisting on America’s unshakeable commitment to maintaining the Pentagon’s defense dole, actually increasing the money spent on and troops deployed to Europe. Fifth, Europeans are well able to defend themselves. Although maybe not easily with their current force structure. German Foreign Minister Heiko Maas insisted that “Without the United States, we are currently unable to protect ourselves.” Yes, currently, because Europe does not spend more and does so more effectively. Europe has an equivalent economy and a larger population than America. The continent possesses eleven times the economic strength and nearly four times the population of Russia. Already Europeans devote four times as much as Moscow to the armed forces. And Europe could do much more. Collective action obviously can be difficult, but that could be eased by a sense of urgency. The continent doesn’t do more because it doesn’t want to do more, not because it can’t do more. NATO Secretary‐​General Jens Stoltenberg went further, contending that “we need to avoid any perception that Europe can manage without NATO, because two World Wars and the Cold War taught us that we need a strong transatlantic bond to preserve peace and stability in Europe.” He apparently hasn’t noticed that fascism, Nazism, and communism have disappeared from the continent. The greatest barrier to the Europeans managing without America’s aid is their lengthy dependence on the U.S. That makes the transition more complicated and perhaps traumatic, but not impossible. Sixth, many Europeans don’t want to defend each other, or America. In a YouGov survey earlier this year, only 42 percent of French, 53 percent of Germans, and 59 percent of Britons believed the alliance had an important role to play in the continent’s defense. Almost uniformly, Europeans were more concerned about terrorism, which the alliance is ill‐​equipped to handle, than invasion. The willingness of people in NATO members to aid allied states varied dramatically, with support in some cases falling into the teens. There was inconsistent backing for military action even in the most important alliance members. For instance, the majority of French and British were mostly unwilling to defend other states, except each other.

### AI

#### US leadership in AI shapes international norms

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This judgment is shared by many countries. China, Russia, members of the European Union, Japan, and South Korea all are increasing AI research, development, and training. China in particular sees advances in AI as a key means to surpass the United States in both economic and military power. China has stated its intent to be the world leader in AI by 2030 and is making major investments to achieve that goal.

The United States needs to respond to this technological challenge in the same way it responded to prior technology competitions, such as the space race. U.S. leadership in AI is critical not only because technology is a key enabler of political, economic, and military power, but also because the United States can shape how AI is used around the world. As this report explains, while AI can be used for incredible good by societies, it already is being abused by authoritarian states to surveil and repress their populations. And advances in AI technology are enabling future malign uses, such as launching sophisticated influence attacks against democratic nations. The United States must make sure it leads in AI technologies and shapes global norms for usage in ways that are consistent with democratic values and respect for human rights.

This CNAS report offers sensible ways to ensure U.S. leadership in the coming “AI century.” If you are seeking a primer on AI or a long argument about its import, look elsewhere.[1](https://www.cnas.org/publications/reports/the-american-ai-century-a-blueprint-for-action#fn1) This report has a bias for action. It is built around a list of concrete recommendations, segmented into seven sections, with concise rationale and explanation for each. Together, the recommendations provide the framework for a national strategy for AI leadership.

#### The CP solves AI leadership

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The United States excels when it pursues big ideas. It is one of the few countries in the world that can rally its resources and its human capital to achieve the most ambitious of goals. The United States stands at the cusp of another such moment. Prudent policy decisions today will help to protect and cement America’s lead in AI for decades. Together these actions will help to ensure that the coming AI century is an American one, a new technological era where America’s national security—and that of U.S. allies and partners—is more secure, its economy is poised to flourish, and its norms and values underpin AI technologies worldwide.

#### US action alone solves AI management

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The United States has been working to codify the National Artificial Intelligence (AI) Initiative that focuses on six strategic pillars: improving AI innovation, advancing trustworthy AI, creating new education and training opportunities through AI, improving existing infrastructure through new technologies, facilitating federal and private sector utilization of AI to improve existing systems, and promoting an international environment that supports further advances in AI. In April 2022, the U.S. Department of Commerce, and the National Institute on Standards (NIST) announced members of the inaugural National Artificial Intelligence Advisory Committee (NAIAC), which will be tasked with advising the Biden administration on how to proceed with national AI governance efforts. At their [first meeting](https://www.youtube.com/watch?v=Uq-CydVwLDw&t=1s) on May 4, 2022, the NAIAC discussed the use of AI pertaining to U.S. competitiveness, issues related to workforce, and whether there is adequate national oversight of AI systems. Taken together, the objectives of the national AI initiative and the creation of the NAIAC will ensure strategic and timely approaches to the design and deployment of autonomous systems, as well as further establish national norms.

Of equal importance is that the technology needs to be improved for domestic use cases as part of this national effort, especially in areas with the potential to create either differential treatment or disparate impact for federally protected and other vulnerable populations. If the U.S. excludes such considerations from national governance discussions, historic and systemic inequalities will be perpetuated, limiting the integration of the needs and lived experiences of certain groups into emerging AI innovations. Poor or inadequate decisions around financial services and creditworthiness, hiring, criminal justice, health care, education, and other scenarios that predict social and economic mobilities stifle inclusion and undercut democratic values such as equity and fairness. These and other potential harms must be paired with pragmatic solutions, starting with a comprehensive and universal definition of bias, or the specific harm being addressed. Further, the process must include solutions for legible and enforceable frameworks that bring equity into the design, execution, and auditing of computational models to thwart historical and present-day discrimination and other predatory outcomes.

While the NAIAC is the appropriate next step in gathering input from various stakeholders within the private and public sectors, as well as from universities and civil society stakeholders, representatives from more inclusive and affected groups are also key to developing and executing a more resilient governance approach. In 2021, the Brookings Institution Center for Technology Innovation (CTI) convened a group of stakeholders prior to the NAIAC formation to better understand and discuss the U.S.’s evolving positions on AI. Leaders represented national and local organizations advocating for various historically-disadvantaged and other vulnerable populations.

#### US will develop effective management

Sussman et. al. 21- Partner at Orrick LLP AND\*\* Associate at Orrick LLP AND\*\* Associate at Orrick LLP (Heather, Ryan McKenney, Alyssa Wolfington, “U.S. Artificial Intelligence Regulation Takes Shape,” Orrick LLP, 11-18-21, Accessed Online at <https://www.orrick.com/en/Insights/2021/11/US-Artificial-Intelligence-Regulation-Takes-Shape>, Accessed Online on 6-21-22)

A recent flurry of AI-related activity has emanated from the U.S. Department of Commerce (DoC)—including a move towards the development of a risk management framework.

In the National Defense Authorization Act for 2021, Congress directed the National Institute of Standards and Technology (NIST), which falls under DoC, to develop “a voluntary risk management framework for trustworthy AI systems.” In July, NIST issued a Request for Information (RFI) seeking input to inform the development of the AI Risk Management Framework (AI RMF). The AI RMF may greatly influence how companies and organizations approach AI-related risks, including avoiding bias and promoting accuracy, privacy, and security.

In September, the DoC also established the National Artificial Intelligence Advisory Committee (NAIAC) in accordance with the National AI Initiative Act of 2020. The NAIAC will “advise the President and other federal agencies on a range of issues related to artificial intelligence,” and will offer recommendations on the “current state of U.S. AI competitiveness, the state of science around AI, issues related to the AI workforce” and how AI can enhance opportunities for historically underrepresented populations, among other topics.

Given its responsibilities and engagement with AI, DoC—and NIST in particular—appears poised to be central to the federal approach to AI regulation.

### Biotech

#### US biodefense strategy solves

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The multi-use nature of emerging biotechnology presents several unique challenges to biosecurity policy and governance. Biosecurity and biodefense—broadly conceptualized—will be affected by emerging biotechnologies in a variety of ways which only now are beginning to be understood. In 2016, the National Defense Authorization Act (NDAA) required the U.S. government to create a new “National Biodefense Strategy”, along with an implementation plan that encompasses the well over 100 existing biodefense and biosecurity policies and programs. The NDAA also requires an assessment of all existing governance to date, the analysis for which has not been made public. Although some have done work to evaluate the landscape of policies, no one yet has done a comprehensive relational analysis of their implementation. However, without a system-wide evaluation of all policy, the immediate and longer-term consequences to U.S. objectives for countering biological threats may never be understood. To better understand biosecurity and biodefense policy implementation and broader consequences, the authors have undertaken a comprehensive, relational analysis of all biodefense and biosecurity policies since 1913. The creation of such a relational “landscape” of policy enabled the authors to: 1) make fundamental observations about the biodefense policy landscape as it currently exists; 2) provide direction for the analysis of opportunity costs associated with the implementation of policies; 3) support the evaluation of policies; and 4) delineate clear needs for incorporation in the roadmap. Included in the analysis were U.S. Code, international agreements and partnerships, guidance, guidelines, and agency and executive-level strategies as primary components. U.S. Code, which encompasses enacted legislation and regulations, was used to prevent double-counting of policies. Once assembled, each policy was tagged by policy type, subject area, primary biodefense objective for which the policy was created, and the biodefense objectives that the policies indirectly affect after implementation. Figure 8 illustrates our approach used to analyze U.S. biodefense and biosecurity policies. Gephi was used to create the network maps and Tableau was used to create the dot graphs.(50, 51) All policies included in this analysis are publicly available through the U.S. Code, Code of Federal Regulations, Government Printing Office, White House archives, PHE.gov, and individual agency websites. To map policies to biodefense objectives, the authors evaluated the utility of using either the four pillars of biodefense in the 2004 Homeland Security Presidential Directive 10/Biodefense for the 21st Century or the seven objectives in the National Strategy for Countering Biological Threats. However, neither of these objectives included the full range of biodefense objectives. Therefore, the objectives used in this analysis are listed below and cover the full spectrum of biodefense activities: • Situational Awareness, which includes threat assessment, risk assessment, and intelligence • Prevention, which includes export control, physical security, personnel security, cyber security, nonproliferation, and threat reduction • Preparedness, which includes preparedness planning, community engagement, research and development of medical countermeasures, and detection and biosurveillance activities • Response • Recovery Science and technology capabilities supporting biodefense objectives are: • Natural, engineering, and social science research • Medical countermeasure research and development • Biosurveillance and detection • Forensics The science and technology capabilities often fall under more than one biodefense objective and therefore, are included as separate objectives in our policy analysis. In addition, biosafety is listed separately in the policy analysis primarily because both of its definitions – measures to prevent laboratory exposure or release of pathogens and to prevent environmental release of genetically modified organisms for the protection of biodiversity – may help to address biosecurity risks. Laboratory biosafety measures provide overlapping benefits for laboratory biosecurity. Furthermore, U.S. policies on safety of biotechnology products and recombinant and synthetic nucleic acids are part of the overall governance landscape of biology and biotechnology, including research about which security concerns are raised. For example, synthesis of the extinct horsepox virus using commercially-synthesized DNA has elicited significant concern among security experts about its dual use potential. This research would not be covered under any U.S. biosecurity policy if conducted in the U.S. because horsepox is an animal only pathogen that went extinct on its own. However, this research would be covered under U.S. biosafety and worker protection policies if conducted in the United States. Because of its complexity and the concern it has generated among some national security experts, the authors have developed a policy case study on this research.

#### Detection and early warning solves spread

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Biological threats are inherently difficult to calibrate. In the natural environment, emerging and re-emerging pathogens are constantly evolving and spread opportunistically. The intentions and capabilities of human actors to exploit biological agents for purposes of terrorism and war are also in flux as advancing biotechnologies enable both state and nonstate actors to develop new threats. Thus, bio surprise is inevitable, even when the risk is generally acknowledged. Following the initial surprise, rapid detection and assessment are critical to staying ahead of the threat. a. Looking ahead a decade, emerging infectious diseases will likely intensify. A combination of factors, including increased human encroachment into remote habitats and the effects of global warming, can be expected to increase the frequency of epidemics and pandemics. Participants agreed that the United States does not have the luxury of preparing for one or the other (naturally-occurring or man-made); it must be prepared for both. b. Early warning can make a huge difference in mitigating human and other consequences. This requires broad surveillance, reliable information, and broad information sharing. The United States and the international community have multiple capabilities in place to look for early warning signs of an emerging public health crisis, but these depend on a high degree of scientific competence and credibility. Both have diminished in recent years or have failed to adapt in the face of growing political and societal challenges to authority and expertise. Divestment, disinformation, and outright attacks have all been contributing factors. c. With early indicators in hand, the role of the scientific community is to out-race the unfolding public health crisis by rapidly characterizing the biological source, openly sharing epidemiological data, implementing public health measures (such as maskwearing, contact tracing, and isolating the sick), and developing medical therapeutics. The ability to do these has greatly advanced in recent years, with improved international cooperation within the scientific community a contributing factor. The potential pathways to medical solutions have also increased significantly (e.g., there are currently 44 vaccines for COVID-19 in clinical evaluation and another 154 in preclinical stages). 3. Looking to the future, specific actions should be in place to enable an effective crisis response. This includes steps to enable the rapid production and deployment of diagnostic tests, monoclonal antibodies, antivirals, and anti-inflammatory drugs. It also includes steps to maintain a capacity for large-scale development and production of vaccines and new therapeutic drugs. In addition, better predictive models would improve the analysis of alternative interventions; however, these models require access to well curated and prepositioned data sets. A key challenge in accelerating responses by the medical research community is the improved use of research that has not yet been peer reviewed; some innovative mechanisms to rapidly review, assess, and make available worthy research are now up and running. 4. In addition, many of the global and regional partnerships needed to respond effectively have not worked as desired during COVID-19 and are in need of repair. These partnerships include the following: public-private, public health-national security, medical-law enforcement, U.S.- allies, international organizations-member states, government-news media, elements of the supply chain, etc. 3 5. To a significant extent, further revisions to national strategy will be driven by lessons learned from the COVID-19 epidemic. As the pandemic tapers off, governmental attention and funding are likely to remain high—for a while. If the past is any guide, however, other demands will emerge, and both attention and funding will decline. Given the expectation of an increased frequency of public health crises in the future, specific actions should be taken now while there is increased funding and public attention on the problem. a. Successful management of a health crisis requires a whole of government response. Essential capabilities include the ability to rapidly get all stakeholders to the table, generate reliable data, quickly define required decisions and make them, rapidly identify and cope with unexpected facets of the problem, coordinate the distribution of limited resources, and coordinate implementation activities across state, federal, and local lines. They also include the ability to manage the domestic and international political dimensions of a situation, rather than try to pretend that a public health crisis is not a political event. The opportunity to learn and practice these skills will improve their efficacy during a crisis. b. Communicating effectively in crisis is an especially important skill. Past crises have repeatedly taught a lesson about the importance of communicating with empathy. This means telling the truth, providing hope, setting expectations, and being explicit about “the ask” of the audience. c. Much more can be done both nationally and internationally to strengthen existing capacities and add new capabilities. Significant gaps remain in the global architecture of institutions and processes for managing biological risks, whether naturally occurring or man-made. d. The United States should also learn from the successes of its COVID-19 response, particularly those from Operation Warp speed. Many panelists commented that the speed by which vaccine candidates have advanced to clinical trials was amazing. This success story demonstrates how the U.S. government can help underwrite cost and risk of new vaccine development for pharmaceutical companies.

#### Managing risks is key

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The prevailing approach to managing pandemic risks is to quickly detect and respond to infectious diseases as they arise. The tools for doing so have steadily improved since the 1980s. Panelists cited two in particular: first, in the mid-1990s, U.S. and Israeli support developed the Global Infectious Disease and Epidemiology Network, a unified online software platform for diagnosing diseases and identifying potential treatments. With the twin advent of genomic science and improved computing power, U.S. universities and federally funded research centers developed significant bioinformatics capabilities to aid in the processing of emergent pandemic data and the identification of responses. The widespread use of relatively inexpensive, high throughput genomic sequencing has aided bioinformatics efforts and may aid in characterizing the risks of future pandemics. The genomes of over 2000 viruses have been sequenced thus far, although approximately 300,000 mammalian viruses remain unsequenced. In contrast, success in predicting the emergence of harmful pathogens has proved more elusive. A stronger worldwide surveillance system that monitors people with novel and unusual diseases would provide additional early warning before pandemics emerge. However, there are domestic and geopolitical barriers to the development of such a surveillance system. Governments are hesitant to provide external researchers with the kind of access necessary to conduct good disease surveillance, while sustained access might require a degree of international cooperation that is unrealistic in an era of renewed interstate competition. In addition, all pathogens are somewhat unique, and the emergence of a particularly virulent infectious diseases can overwhelm the ability of public and private sector actors to prevent spread of a contagion and rapidly produce vaccines and treatments. These challenges affect both man-made and natural pathogens. Man-made threats are further complicated by the dual-uses of many emerging biotechnologies which lack effective means for establishing norms to enforce their misuse. Early warning and response could also be significantly improved with a better understanding of which pathogens might infect humans and cause adverse effects. This could contribute to efforts to anticipate natural pathogens as well as potential man-made threats. A framework for understanding the movement of pathogens from animal to human hosts would involve several aspects, including identifying whether animals and humans share particular cell receptors that would allow for infection, the intracellular components that would allow viruses to replicate, and the mechanism of cross-species transmission. Panelists also identified the importance of studying single- and double-stranded RNA and DNA viruses to better understand their replication. The U.S. government through DARPA and other funding has sponsored several efforts to develop tools for anticipating future pandemics. Nevertheless, such efforts must contend with the unique attributes of otherwise related pathogens. For instance, SARS-CoV-2, the novel coronavirus that causes COVID-19, proved to be more infectious and more harmful than other coronaviruses. 5 Nevertheless, panelists emphasized that it was too costly an effort to study all identified viruses to understand potential risks. A more fruitful approach was to invest in better global biosurveillance to filter out “signals” from “noise”—that is, to leverage the capabilities of the global health community to provide credible early warning when potential pathogens first begin to spread. While there is national interest in anticipating emerging threats, participants did not identify a clear path forward for U.S. government efforts. One recommendation was that the U.S. Intelligence Community reassess its standards for confidence when making judgments about potential pandemic risks. Excessively high confidence requirements for community acceptance of judgments could, the argument goes, limit further study of a potential threat. Another recommendation was to leverage artificial intelligence and computing capabilities to better mine large data sources for insight into emergent threats.

#### US biotech investment alone solves

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Leading in biotechnology is crucial for many U.S. economic and strategic goals; however, the U.S. must balance these with necessary regulation and oversight. Geopolitical events, such as global pandemics or great power competition, can also influence this balancing act. How can leaders strike the right balance to attain maximal benefit and prosperity for the United States? It was also clear that professionals in the biological sciences should play a role in determining this balance, potentially through organizations such as the National Academies that bridge the scientific and policy communities. 12 Responsible leadership is a central factor in establishing the necessary oversight starting at labs and extending to the intergovernmental sphere. Biotechnology and biosecurity regimes call for principled leadership that is responsive to scientists, policymakers, and stakeholders across institutions. Engaged leaders devise whole of enterprise solutions, an issue noticeably lacking with COVID-19 and a theme which will certainly appear in the future. Accordingly, oversight from knowledgeable leaders is a vital force in crafting policy that will spur innovation to build trust across sectors. Leaders and bureaucrats setting the regulatory tone should be mindful of striking the right balance: scientists who labor under burdensome regulatory regimes may be stymied in their pursuit of technological advancement. Leaders should avoid counterproductive measures such as layers of oversight, redundant paperwork, or a distrustful culture that hinder scientists’ spirit of risk taking or engagement beyond a stovepiped world. One troubling reality exists: much of global oversight falls between seams of multinational organizations, and cooperation from scientists and policymakers is essential to remedy a dilemma brought further into relief by COVID-19. There is no ambiguity on the necessary role of scientific expertise in biosecurity and biotechnology: to leverage cooperation to play an outsized role in working beyond the sphere of geopolitical competition. Panelists were unanimous in scientists’ power to work effectively across borders, to make friends via science. Forging relationships based on like-minded scientific expertise creates the possibility for the scientific community to harmonize interests that may sit uneasily between sparring nations’ heads of state. A basis for a Track 2 or 1.5 dialogue between different governments may run through the long-standing friendships that were cultivated by scientists before the return of great power competition. Scientist-to-scientist bonds offer policymakers with a foundation to utilize not only for diplomatic ends, but also in the possibility of a future global pandemic that necessitates collaboration. Scientific relationships will be the cornerstone for future cooperation, even when the fires of geopolitical competition flare up. Biotechnological competition with China represents a rupture from the past and threatens American primacy in this domain. Chinese policymakers identified biotechnology as a key space for China to dominate. China’s prioritization of biotechnology meets multiple ends for a state poised to shape geopolitics: Chinese biosecurity, the nation’s economy, and the health of the Chinese people. China’s strategic whole of nation investment in biotechnology aims to unseat the United States from its place of historic control over the material and intellectual production of biotechnology. In a break from historic competitors, a rival nation-state is pouring resources into technology development at levels that are comparable with the United States’ publicprivate funding streams. With the arrival of a near peer competitor in biotechnology, how should U.S. policymakers strike the right policy balance? On the one hand, stakeholders in government, philanthropy, and the private sector cannot underestimate the magnitude of the challenge. The implications for the United States extend beyond facing a competitor. China’s military-civil fusion, alongside torrents of state funding, aspires to fuse agents across China into the mission of overtaking America’s global position. The stakes are clear, and the consequences of losing preeminence for American biosecurity and economy should not be underestimated. 13 On the other hand, engagement with Chinese scientists and policymakers should not be dismissed out of hand. The experts agreed that China should be encouraged to take up a partnership role in the global biosecurity and biotechnology architecture. Evidence of Chinese willingness to participate exist at the institutional and personal level, and the voices on both sides of the Pacific urging cooperation should not be squelched. An American whole of enterprise solution to compete with China can exist in parallel with outreach efforts to prevent future pandemics. Striking the right balance between engaging and competing with China will not be easily executed, yet it is a policy solution that leaders in Beijing and Washington must embrace. A whole of sector push to facilitate developing nations’ biotechnology and biosecurity development can garner influence for the United States. Developed countries no longer hold a monopoly over biotechnologies. Developing countries are increasing investments in biotechnology, and this represents an opportunity for the United States to assert global leadership. Leveraging the United States’ scientific expertise to compete against China, shape norms, and usher in a global regulatory regime is not only a positive series of outcomes. It gestures to a policy agenda for the America’s role in the world’s biotechnology and biosecurity frontier. Nation-state competition is not the only challenge facing the United States. A pattern of panic and neglect historically led policymakers and the public to abandon investments in biosecurity of the order required to overcome COVID-19 and future pandemics. Institutions that preserve focus on biosecurity and biotechnology must be built that strike the right balance between encouraging oversight, elevating scientific expertise, competing with China, and cooperating internationally. The United States’ security, health, and economy are tethered to a biotechnological future that demands attention, not neglect.

#### Funding for the WHO is critical

Nature 20 (“Withholding funding from the World Health Organization is wrong and dangerous, and must be reversed”; Nature; April 17, 2020; <https://www.nature.com/articles/d41586-020-01121-1>) Accessed 11/21/21//

De-funding the WHO is especially dangerous for those low-income countries in which the agency’s work is crucial to maintaining standards of public-health infrastructure, and also to tackling killer diseases. The WHO’s epidemiologists, clinicians and logistics personnel are right now overseeing more than 35 emergency operations, including a measles outbreak in the Democratic Republic of the Congo and a cholera outbreak in Yemen. On top of its emergency operations, the WHO handles ongoing efforts to treat tuberculosis and diabetes; eradicate polio; and study tropical diseases. This is all on an annual budget of roughly $2.4 billion. Of this, the WHO’s emergency-response budget is approximately $280 million. By contrast, the agency that tackles public-health emergencies in the United States — the Centers for Disease Control and Prevention — has a total budget of around $12.7 billion this year. Finding the balance A pandemic is always a big test for the WHO. In previous health emergencies, the agency has been criticized for acting too slowly, or — in the case of the 2009 H1N1 influenza pandemic — overstating the risks. But leading public-health researchers and practitioners agree that, so far in the current crisis, the agency has offered leadership and acted according to the evidence it has received. The WHO was notified of a cluster of pneumonia cases by China on 31 December, and it began an emergency-response process the following day. Its many actions since then include posting and updating guidance on how to diagnose COVID-19, vetting diagnostic tests and distributing them around the world. The agency’s science division convened world experts to survey potential therapeutics. From this, it developed an adaptable clinical-trial protocol, known as SOLIDARITY, that has been launched globally. More recently, the WHO has set up a supply-chain management system to try to ensure that low-income countries are not left without tests, medical equipment or protective gear for health workers — given the fierce competition for these limited resources. The WHO declared a public health emergency of international concern, or PHEIC, on 30 January. That announcement is a trigger for the agency’s member governments to follow its recommendations. These include establishing a comprehensive programme of testing, quarantining people suspected to be infected, and tracing their contacts. Some countries acted quickly, including Germany, Singapore and South Korea. But the United States is among those that has not followed these particular recommendations. Even now, it does not have a national infrastructure for testing for the virus, nor for tracing the contacts of those infected with it. In early March, WHO director-general Tedros Adhanom Ghebreyesus pleaded with the world when he said: “You can’t fight a virus if you don’t know where it is. That means robust surveillance to find, isolate, test and treat every case, to break the chains of transmission.” But the Trump administration chose not to follow the WHO’s advice. Instead, influential lawmakers have been calling for an investigation into the WHO’s actions, claiming that the agency was too slow to sound the alarm and too deferential to the Chinese government. At the same time, they are implicating the WHO in wider questions being directed at China’s government. These include that China could have acted more quickly to lock down in the days after the first outbreak, and that public officials withheld important information. Such questions must be asked of China, but they are not for the WHO — which acts at the behest of governments — to answer. And they are not reasons to de-fund the agency. It is, of course, crucial that lessons are learnt from all stages of this pandemic. Once it is over, there will be many national and international investigations and inquiries — including the WHO’s own — and these will uncover what went right, what went wrong and what could have been done better. It is always tough to operate in a pandemic, and tougher still when essential cooperation between governments is at a low ebb. Such inquiries will be an opportunity to improve and to grow. They are not a reason to undermine or attack. This pandemic needs the world to follow a coordinated plan, covering decisions including how and when lockdowns are to be relaxed. It is extraordinary that more than three months into the outbreak, such a plan is nowhere to be seen. On 19 April, the health ministers of the G20 group of nations will meet virtually. When they do, they must put such a plan in place. The best hope of achieving that is for all nations to work with the WHO and other international agencies. It is right that researchers, funders and governments have been protesting against Trump’s decision, and they must continue to do so in the strongest terms. Those in the United States must also lobby their lawmakers at every level. The president and his administration must not withhold funding from the WHO. Doing so will place more lives at risk and ensure that the world takes longer to emerge from this crisis. Nearly 70 years ago, the United States was instrumental in helping to establish the WHO. Nations realized that they needed such an agency in part because they couldn’t tackle pandemics by acting alone. It is a sad indictment of the state of our world that the agency is now having to fight for its future while doing the job it was created to do. We need to support the WHO so it is at its strongest, not undermine it at such a crucial hour.