# 1NC

## Offs

### 1

#### Interpretation: The aff may not defend WTO member nations reducing intellectual property protections for a subset of medicines.

#### **Violation – they only defend COVID-19 medicines**

#### Vote neg:

#### 1] Limits – you can pick anything from COVID vaccines to marijuana to random biotech to insulin treatments and there’s no universal disad since each one has a different function and implication for health, tech, and relations – explodes neg prep and leads to random medicine of the week affs which makes cutting stable neg links impossible. PICs don’t solve – it’s absurd to say neg potential abuse justifies the aff being flat out not T, which leads to a race towards abuse. Limits key to reciprocal engagement since they create a caselist for neg prep.

#### 2] TVA – read the aff as an advantage to a whole rez aff.

### 2

#### **Interp – “medicines” treat or cure, whereas vaccines prevent – o/w on specificity since it’s about the COVID vaccine**

Vecchio 7/22 (Christopher Vecchio, [CFA, Senior Strategist,], 7-22-2021, “Delta Variant Concerns Won't Cripple Markets, US Economy“, DailyFX, accessed: 8-9-2021, https://www.dailyfx.com/forex/video/daily\_news\_report/2021/07/22/market-minutes-delta-variant-concerns-wont-cripple-markets-us-economy.html) ajs

Let’s stick to the facts. The COVID-19 vaccines are not medicines, which by definition “treat or cure diseases.” Vaccines “help prevent diseases,” an important distinction. Why does this matter? Because data coming out of some of the world’s developed economies with high adult vaccination rates suggest that the vaccines are working as intended: tail-risks have been reduced, with hospitalizations and deaths falling relative to the recent spike in infections (which have been occurring primarily among the unvaccinated at this point). Put another way, vaccines are like a Kevlar vest for the immune system; while they don’t make you bulletproof, they dramatically increase the odds of surviving an adverse event.s

#### Violation – their advantage area is about vaccines which means either a. they solve nothing and vote neg on presumption because vaccines aren’t “COVID-19 medicines” or b. they violate

#### Negate –

#### 1] Limits – expanding the topic to preventative treatment or medical interventions allows anything from surgery to medical devices to education strategies or mosquito repellent to prevent malaria. Destroys core generics like innovation which are exclusive to disease curing – core of the topic is about proprietary information.

#### Voters:

#### Drop the debater – they have a 7-6 rebuttal advantage and the 2ar to make args I can’t respond to,

#### Use competing interps reasonability invites arbitrary judge intervention since we don’t know your bs meter,

#### No RVIs –illogical – you shouldn’t win for being fair – it’s a litmus test for engaging in substance,

#### Evaluate T before 1AR theory – norms – we only have a couple months to set T norms but can set 1AR theory norms anytime,

### 3

#### The United States should:

#### - substantially increase production and global distribution of the COVID-19 Vaccine

#### - cooperate with allies to achieve increased production and global distribution of the COVID-19 Vaccine.

Solves heg – us intervenes in vaccine diplomacy better than the aff bc it looks like follow on w the other wto countries

Solves developing econs – gives them vaccines

Solves credibility – resolves covid which the wto is struggling with

#### That solves better – IP rights don’t hinder vaccine cooperation, but manufacturing capacity is the current constraint.

Hans Sauer 6-17 [(Deputy General Counsel, Biotechnology Industry Organization.) “Web event — Confronting Joe Biden’s proposed TRIPS waiver for COVID-19 vaccines and treatments” https://www.aei.org/wp-content/uploads/2021/06/210617-Confronting-Joe-Bidens-proposed-TRIPS-waiver.pdf?x91208&x91208] TDI

But contrary to what Lori said, **there are genuine real problems in the supply chain** that are **not caused by patents**, that are simply caused by the unavailability and the constraints on existing capacity. There is in this world such a thing as maxed-out capacity that just can’t be increased on a dime. It’s not all due to intellectual property. This is true for existing vaccines as well as for vaccine raw materials. There are trade barriers. There are export restrictions that we should all be aware of and that we need to work on. And there are very real political, I think, interests in finding an explanation for how we got to this place that absolve governments around the world from their own policy decisions that they made in the past. In the United States, again, it was the declared policy of the previous administration, as well as this one, that we would vaccinate healthy college kids and go all down the line and offer a vaccine to everybody who wants it before we start sharing any with grandmothers in Burkina Faso. That was the policy. You can agree with it or disagree with it, but that was policy. We had export restrictions in place before a lot of other countries did. And that, too, contributed to unequal access of vaccines around the world. Another thing that was predictable was that politicians and governments around the world who want to be seen as proactive, on the ball, in control, for a long time were actually very indecisive, very unsure about how to address the COVID problem, which has so many dimensions. Vaccines are only one of those. But with respect to vaccines, not many governments took decisive action, put money on the table, put bets on multiple horses, before we knew whether these vaccines would work, would be approved. And it was governments in middle-income countries who now, I think, justifiably are concerned that they’re not getting fast enough access, who didn’t have the means and who didn’t have the decision-making structure to place the same bets on multiple horses, if you will, that were placed in the relatively more wealthy, global North and global West. But there is, I think, a really good and, with hindsight, predictable explanation of how we got to this place, and I think it teaches us something about how to fix the problem going forward. **So why will the waiver not work**? Well, first of all, with complex technology like vaccines, Lori touched on it, reverse engineering, like you would for a small molecule drug, is much more difficult if not impossible. But it depends very much more than small molecule drugs on cooperation, on voluntary transfer of technology, and on mutual assistance. We have seen as part of the pandemic response an unprecedented level of collaborations and cooperation and no indication that IP has stood in the way of the pandemic response. **The waiver proponents have found zero credible examples of where IP has actually been an obstacle,** where somebody has tried to block somebody else from developing a COVID vaccine or other COVID countermeasure, right? It’s not there. **Second, the myth of this vast global capacity to manufacture COVID vaccines that somehow exists** **out there is unsubstantiated** and frankly, in my opinion, untrue. But there is no such thing as vast untapped, idle capacity that could be turned around on a dime to start making COVID vaccines within weeks or even months. This capacity needs to be built; it needs to be established. And at a time when time is of the essence to beat this pandemic, starting capacity-building discussions is helpful, but it won’t be the answer to beat this pandemic. It will be the answer if we do everything right to beating the next pandemic. And if we learn any lesson of this, and then I will stop, is that the COVID waiver as well as the situation in which we find ourselves — if anything, it’s a reminder that we definitely have to take global capacity-building more seriously than we did in the past. That is true for the global North, as well as for middle-income countries — all of whom have to dedicate themselves much more determinedly to pandemic preparedness. And there’s a need to invest both in preparedness and in public health systems that hasn’t happened in the wake of past pandemic threats. This is what we will need to do. We will need to reduce export restrictions, and we will need to rededicate ourselves to preparing for the next pandemic. As far as this pandemic goes, **there are 11 vaccines around the world that are already being shot into arms, only four of which come from the global North. How many more vaccines do we want?** I don’t know, maybe 11 is enough if we start making more of them. But there are manufacturers around the world who know how to do this — including in China, including in India, and including in Russia. All developed their homegrown vaccines, apparently without interference by IP rights, right? **So let’s make more of those. I think that’s going to be the more practical and realistic answer to solving the problem**. And we need to lean on governments to stop export controls and to dedicate themselves to more global equity.

#### Unilateral US action is necessary to combat Chinese and Russian vaccine diplomacy – they’re establishing spheres of influence because of few vaccines in developing countries – collapses the LIO.

Carman and Carl 21. [(Ezequiel Carman is an Argentine lawyer and global health and trade policy consultant. Previously, he served as a legal advisor to the Ministry of Justice of Buenos Aires, an assistant professor of international public law at the Universidad Católica Argentina, and a research assistant at the O’Neill Institute for National and Global Health Law. Joseph Carl is a graduate of Liberty University, where he studied international relations and strategic international studies. He has worked for the U.S. Department of State and the Heritage Foundation) “A U.S. vaccine diplomacy strategy for Latin America and the Caribbean,” The Global Americans, June 15, 2021. <https://theglobalamericans.org/2021/06/a-u-s-vaccine-diplomacy-strategy-for-latin-america-and-the-caribbean/>] TDI

Once again, history seems to be repeating itself. The United States, along with the world’s other rich and mostly Western countries, continue to be accused of **hoarding medical supplies**, having purchased one billion surplus vaccine doses (more than is required to vaccinate their citizens). In their absence, China—and, to a lesser extent, Russia—have rushed to **take advantage of the vaccine gap** in the Global South, particularly in Latin America and the Caribbean. A lack of leadership from Washington in sharing vaccines and their intellectual property (IP) earlier in the pandemic has allowed its **geopolitical competitors to take advantage** of Latin America’s desperate need to acquire scarce vaccines. Although the region represents only eight percent of the global population, it has experienced nearly one-third of all COVID-19 deaths. Historical precedent demonstrates this is not the first time that Washington’s international moral standing has been damaged during a global health crisis, due to the lack of political will to share lifesaving drugs and other vital resources. However, this time around, unlike in such past episodes, there will be concrete geopolitical consequences to Washington’s inaction. In recent years, the U.S. has **lost significant political and economic influence** among its southern neighbors; without swift remedial action, its **geopolitical rivals may cement such losses through their campaigns of vaccine diplomacy.** To rebuild its influence in the region, Washington will need to muster the political will to increase Latin America and the Caribbean’s access to vaccines and develop a sound **strategy for its own vaccine diplomacy**. Already, some countries in the region have been sufficiently strong-armed by other global powers, the implications of which could be **damaging for U.S. interests**. As the world transitions into the next stage of the pandemic, those nations that continue to be most ravaged by COVID-19 will likely continue to remember which countries provided them with aid and succor in their time of need. History repeats itself In 1981, the first cases of acquired immunodeficiency syndrome (AIDS) were reported; the following decade was defined by a devastating global AIDS epidemic (which would eventually be recognized as a pandemic). Analogous to how Latin America and the Caribbean have borne disproportionately the burden of COVID-19, Africa was hit hardest by the AIDS epidemic. Many parallels can be drawn between the international handlings of both the COVID-19 and AIDS pandemics. By the late 1980s, once antiretroviral therapies (ARV) were approved by the U.S. Food and Drug Administration (FDA), AIDS deaths in the U.S. began to decline immediately. Nevertheless, high levels of AIDS-related deaths in Africa continued for another decade. Africa’s enduring fight against AIDS was largely due to the cost of ARVs, which, at the time, were priced at USD $10,000 per person annually—completely out of reach for most developing countries. Pharmaceutical companies argued that the drug’s high selling price was necessary to procure a return on its investment in the research and development (R&D) of the ARV, and that pricing the drugs at a marginal cost would maximize consumer surplus while also halting future development in the industry. When pricing a drug, a pharmaceutical company needs to factor-in several costs: 1) the cost of R&D for drugs that never enter the market; 2) clinical trials necessary to comply with regulatory requirements; 3) and the marketing cost of promoting the new drug. While the original price of the patented ARV was USD $10,000 per patient per year, the price of the generic version, manufactured by the Indian pharmaceutical company Cipla, was only USD $1.00 per day. During the AIDS pandemic, since many developing countries were members of the World Trade Organization (WTO), they were forbidden from importing generic pharmaceutical products because in order to maintain compliance with regulations imposed by the Trade Related Aspects of Intellectual Property (TRIPS) agreement. Western pharmaceutical companies—the owners of the IP rights for the medications—blocked access to generic ARV drugs out of fear that the importation of these generic alternatives would ultimately threaten their net profitization. Despite the protests of the pharmaceutical industry, India and South Africa continued to compete with and defy the U.S. and the WTO (a body in which powerful industrialized economies—those of the U.S., Europe, and Japan—wield disproportionate influence). Drug companies eventually sued to keep lifesaving therapies out of the hands of dying AIDS-sufferers in Africa, a state of affairs that engendered a forceful reaction from international activists. After years of political pressure, Washington was forced to yield, eventually pushing for the relaxation of stringent IP protections for ARVs, making generic versions of the drugs more accessible and affordable. Despite its eventual concession, the perception that the U.S. had fought bitterly to prioritize pharmaceutical company profits over human lives in the Global South only helped bolster negative narratives surrounding the Western superpower. However, unlike the unipolarity that characterized the 1990s and early 2000s, the U.S. is no longer the only global superpower, and the humanitarian decisions it makes now—during a new global health crisis—have the potential to be hugely consequential for the country’s influence and image. Similar to its trajectory at the height of the AIDS crisis, Washington only recently voiced its desire to back the WTO patent waiver proposal, having come under tremendous international pressure. Granted, the U.S. backed a patent waiver for COVID-19 vaccines much faster than it did for ARVs in the 1980s. However, having been presented with a rare opportunity to make amends for past moral missteps—by eliminating vaccine IP protections to ensure that affordable, generic versions of COVID-19 vaccines could be manufactured en masse around the world—the U.S. once again hesitated, limiting opportunities for developing nations to recover from the pandemic and again amplifying criticisms of the United States. Backed by over 100 developing countries, India and South Africa are once again leading the current fight to eliminate IP protections. India and South Africa filed a waiver with the WTO requesting a temporary suspension of patent obligations under TRIPS (Sections 1, 4, 5, and 7 of Part II) so that developing countries can access vaccines in a timely manner. The intent of this effort is to boost domestic manufacturing capacity by facilitating the widespread production of generic versions of COVID-19 vaccines, evening the odds with respect to global vaccine procurement and accessibility. The waiver would also allow developing countries to procure vaccines more expeditiously, either by producing them themselves or by streamlining the cumbersome institutional and legal requirements of importing pharmaceutical products from other countries that possess the necessary manufacturing capacity. After months of pushback from activists and political leaders, the U.S. finally expressed its support for patent waivers, with several key Western powers (notably France and the European Union (EU)) following suit. However, Germany—a major political player in the patent waiver debate due to its powerful pharmaceutical sector—continues to oppose the move. Other European countries remain similarly split on the patent waiver proposal, reflecting the fact that any patent waiver proposal will still requires extensive negotiation (in order for it to be accepted, there must be unanimous consent among WTO members). Political leaders and activists continue to call on the West to support the waiving of IP protections, noting that current projections anticipate that wealthy countries will be able to immunize their entire populations by the end of 2021, while developing countries will only see the same results in the next three to four years. Unlike the AIDS pandemic, COVID-19 has generated not only massive medical concerns, but also a global economic crisis: vaccination campaigns in richer countries have already allowed them to begin to rebuild their economies, while mass unemployment and lockdowns continue to strangle the economies of many developing nations. Increasing the supply and accessibility of vaccines in the developing world will undoubtedly facilitate a faster, and more equal, economic recovery. Continuing to allow the virus to spread unencumbered throughout the Global South, however, will only increase the likelihood of further viral mutations, possibly jeopardizing the efficacy of existing vaccines and further perpetuating already grave economic and medical concerns. Washington’s initial unwillingness to **cross the pharmaceutical industry** has undeniably damaged the moral standing of the United States. Moreover, this decision also created a humanitarian void eagerly **filled by Beijing and Moscow**, as they actively seek to position themselves as the benefactors of the most COVID-19-stricken region of the world: Latin America and the Caribbean. To date, Russian and Chinese vaccine diplomacy have already led to economic, diplomatic, and political losses being felt by Washington; this trend, if **allowed to continue**, will only further **limit U.S. regional influence** with its neighbors to the south. A lack of strategy and political will In the absence of an **effective vaccine diplomacy strategy** from Washington, and with the perpetuation of its current nationalistic vaccine policy, some of the **pharmaceutical companies** that the U.S. so readily protects have **pushed countries** throughout Latin America and the Caribbean **into the waiting arms of Beijing and Moscow**. While some Latin American countries have received a few vaccines from Western companies, most nations in the region continue to struggle to obtain doses. Pfizer, a U.S. pharmaceutical company, was accused of bullying Latin American countries during vaccine procurement negotiations, using its own leverage to attempt to force desperate nations to offer sovereign assets—such as their embassies—as collateral. Pfizer’s efforts resulted in a lost deal with Argentina, which has continued to grow increasingly closer to China. While the U.S. possesses a surplus of COVID-19 vaccines, it has failed to develop an effective, far-reaching donation strategy. Only recently did the Biden administration announce its plans to ship 80 million vaccines—a small portion of its surplus supply—abroad. Of the initial 25 million doses destined to be distributed internationally, 19 million will be donated to the largely mismanaged UN-backed COVAX program, with only six million of these COVAX doses designated for Latin America and the Caribbean. In comparison, China alone has donated or sold over 165 million vaccines to Latin America, with countries like Chile and Uruguay having vaccinated 80 and 63 percent of their populations, respectively, with Chinese vaccines. The administration of U.S. President Joe Biden previously donated a total of 4.2 million AstraZeneca vaccines to Canada and Mexico, the first vaccines that the U.S. had sent abroad. Still, this relatively modest donation was preceded by repeated calls from prominent Latin American leaders for President Biden to donate vaccines to U.S. allies in Latin America. Mexican President Andrés Manuel López Obrador (AMLO) was notably rebuffed in his request for shipments of U.S. vaccines, being told by the Biden administration that it was prioritizing the vaccination of the American public (despite the fact that Washington had already bought enough vaccines to inoculate the entire U.S. population several times over). Colombia President Iván Duque of Colombia, a country that is a key regional ally, has also called for the Biden administration to aid countries in the Western Hemisphere that are struggling to procure vaccines. By contrast, some Latin American officials have described **easier negotiations, cheaper prices,** and overall better terms in their successful agreements with Russia and China. Last year, for example, Beijing offered a USD $1 billion loan to Latin American nations to help finance their purchasing of Chinese-made vaccines—an offer that was well-received by recipient countries. Due to a **lack of vaccine support** and assurance from Washington, countries are growing closer to Beijing and Moscow, succumbing to **rival geopolitical powers** that do not align with the diplomatic and economic interests of the United States.

#### Heg is good – that’s the aff

### 4

#### Biotech industry strong now – new innovation and R&D coming

Cancherini et al. 4/30 [Laura, Engagement Manager @ McKinsey & Company, Joseph Lydon, Associate Partner @ McKinsey & Company, Jorge Santos Da Silva, Senior Partner at McKinsey & Company, and Alexandra Zemp, Partner at McKinsey & Company] “What’s ahead for biotech: Another wave or low tide?“, McKinsey & Company, 4-30-2021, <https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/whats-ahead-for-biotech-another-wave-or-low-tide> //ajs

As the pandemic spread across the globe in early 2020, biotech leaders were initially pessimistic, reassessing their cash position and financing constraints. When McKinsey and BioCentury interviewed representatives from 106 biotech companies in May 2020,4 half of those interviewed were expecting delays in financing, and about 80 percent were tight on cash for the next two years and considering trade-offs such as deferring IPOs and acquisitions. Executives feared that valuations would decline because of lower revenue projections and concerns about clinical-trial delays, salesforce-effectiveness gaps, and other operational issues.

Belying this downbeat mood, biotech has in fact had one of its best years so far. By January 2021, venture capitalists had invested some 60 percent more than they had in January 2020, with more than $3 billion invested worldwide in January 2021 alone.5 IPO activity grew strongly: there were 19 more closures than in the same period in 2020, with an average of $150 million per raise, 17 percent more than in 2020. Other deals have also had a bumper start to 2021, with the average deal size reaching more than $500 million, up by more than 66 percent on the 2020 average (Exhibit 3).6

What about SPACs?

The analysis above does not include special-purpose acquisition companies (SPACs), which have recently become significant in IPOs in several industries. Some biotech investors we interviewed believe that SPACs represent a route to an IPO. How SPACs will evolve remains to be seen, but biotechs may be part of their story.

Fundamentals continue strong

When we asked executives and investors why the biotech sector had stayed so resilient during the worst economic crisis in decades, they cited innovation as the main reason. The number of assets transitioning to clinical phases is still rising, and further waves of innovation are on the horizon, driven by the convergence of biological and technological advances.

In the present day, many biotechs, along with the wider pharmaceutical industry, are taking steps to address the COVID-19 pandemic. Together, biotechs and pharma companies have [more than 250 vaccine candidates in their pipelines](https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/on-pins-and-needles-will-covid-19-vaccines-save-the-world), along with a similar number of therapeutics. What’s more, the crisis has shone a spotlight on pharma as the public seeks to understand the roadblocks involved in delivering a vaccine at speed and the measures needed to maintain safety and efficacy standards. To that extent, the world has been living through a time of mass education in science research and development.

Biotech has also benefited from its innate financial resilience. Healthcare as a whole is less dependent on economic cycles than most other industries. Biotech is an innovator, actively identifying and addressing patients’ unmet needs. In addition, biotechs’ top-line revenues have been less affected by lockdowns than is the case in most other industries.

Another factor acting in the sector’s favor is that larger pharmaceutical companies still rely on biotechs as a source of innovation. With the [top dozen pharma companies](https://www.mckinsey.com/business-functions/m-and-a/our-insights/a-new-prescription-for-m-and-a-in-pharma) having more than $170 billion in excess reserves that could be available for spending on M&A, the prospects for further financing and deal making look promising.

For these and other reasons, many investors regard biotech as a safe haven. One interviewee felt it had benefited from a halo effect during the pandemic.

More innovation on the horizon

The investors and executives we interviewed agreed that biotech innovation continues to increase in quality and quantity despite the macroeconomic environment. Evidence can be seen in the accelerating pace of assets transitioning across the development lifecycle. When we tracked the number of assets transitioning to Phase I, Phase II, and Phase III clinical trials, we found that Phase I and Phase II assets have transitioned 50 percent faster since 2018 than between 2013 and 2018, whereas Phase III assets have maintained much the same pace. There could be many reasons for this, but it is worth noting that biotechs with Phase I and Phase II assets as their lead assets have accounted for more than half of biotech IPOs. Having an early IPO gives a biotech earlier access to capital and leaves it with more scope to concentrate on science.

Looking forward, the combination of advances in biological science and accelerating developments in technology and artificial intelligence has the potential to take innovation to a new level. A [recent report](https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/the-bio-revolution-innovations-transforming-economies-societies-and-our-lives) from the McKinsey Global Institute analyzed the profound economic and social impact of biological innovation and found that biomolecules, biosystems, biomachines, and biocomputing could collectively produce up to 60 percent of the physical inputs to the global economy. The applications of this “Bio Revolution” range from agriculture (such as the production of nonanimal meat) to energy and materials, and from consumer goods (such as multi-omics tailored diets) to a multitude of health applications.

#### COVID exceptions erode IP policies broadly – plus their Jecker card spots us spillover

PRMA 21 The Pharmaceutical Research and Manufacturers of America SPECIAL 301 SUBMISSION 2021 <https://phrma.org/-/media/Project/PhRMA/PhRMA-Org/PhRMA-Org/PDF/P-R/PhRMA_2021-Special-301_Review_Comment-1.pdf> SM

Moreover, some countries are using the COVID-19 pandemic opportunistically to advance longstanding industrial policies to further erode intellectual property policies. India and South Africa are key sponsors of a proposal at the WTO TRIPS Council calling to eliminate for an indefinite term certain WTO obligations to grant IP on a wide range of technologies related to COVID-19. The proposal marks a significant escalation in anti-IP global activism and will further polarize legitimate conversations on countries’ engagement to combat the pandemic. The proposal will do nothing to address the production and distribution challenges for making COVID-19 vaccines globally available. If anything the proposals threaten to undermine the ability to respond to another pandemic, and will inevitably affect IP discussions in countries around the world.

#### Undermines R&D and innovation

Mercurio 2/12 (Bryan Mercurio, [Simon F.S. Li Professor of Law at the Chinese University of Hong Kong (CUHK), having served as Associate Dean (Research) from 2010-14 and again from 2017-19. Professor Mercurio specialises in international economic law (IEL), with particular expertise in the intersection between trade law and intellectual property rights, free trade agreements, trade in services, dispute settlement and increasingly international investment law.], 2-12-2021, “WTO Waiver from Intellectual Property Protection for COVID-19 Vaccines and Treatments: A Critical Review“, No Publication, accessed: 8-8-2021, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3789820) ajs

1. An IP waiver would undermine R&D and innovation The IP system is designed to encourage and reward creativity and innovation while benefiting society as a whole. The idea is that IPRs stimulate innovation by “enabling innovators to capture enough of the benefits of their own innovative activity to justify taking considerable risks.” 23 Therefore, while in the short term waiving IPRs may arguably accelerate the distribution of goods and services – i.e. access to COVID-19 vaccines – in the long term undermining IPRs would eliminate the incentives that spark innovation, thus hindering the discovery and development of knowledge for new products or technologies that the world needs.24

An example that illustrates the significance of IP protection is the technology of synthetic mRNA, a genetic technology behind the COVID-19 vaccines of both Pfizer and Moderna. Synthetic mRNA is a genetic technology that has long held huge promise but has so far run into biological roadblocks. The concept of tweaking specific strands in synthetic mRNA to deliver desired results was first introduced in the 1990s, but at that time while it made sense in theory it often failed in the real world as synthetic RNA was notoriously vulnerable to the body’s natural defences and the synthetic RNA was very often destroyed before reaching its target cells. In some situations, the foreign materials even elicited an immune response that poses health risks for some patients. The solution, substituting one of the nucleosides (building blocks of mRNA) for a slightly tweaked version to bypass the body’s defence, was not discovered until 2005 and did not reach commercialization stage for another 15 years.

Without the prospect of IP protection, it is simply unimaginable that scientists would devote the human and monetary resources into such R&D as there would have been no incentive to spend the time and effort on a promising but extremely challenging technology. Likewise, venture capitalists would refuse to invest billions of dollars into any research effort knowing that any other company could simply take the successful result and produce a medicine without paying for the R&D costs; in such a scenario, it would be virtually impossible to recoup the initial investment. Thus, without the promise of IP protection the technology underpinning the most advanced and promising COVID-19 vaccines would likely never have been developed. This point is of such importance that it is worth stating the obvious: IPRs have played a large role in the response to COVID-19; a response which has led to an incredible feat of humanity – the identification of the genome of a new pathogen and development of several treatments and promising vaccines within the space of a year. Without the promise of financial gain, the level of R&D into the novel coronavirus would have been greatly reduced and innovation hampered and delayed. In short, the IP system encouraged a robust response to the threat from innovator companies and worked as designed. It would be unwise (if not reckless) to place the innovation system which has delivered results in record time in jeopardy only in exchange for what is at best short-term benefits.

#### Biopharmaceutical innovation is key to prevent future pandemics and bioterror – turns case

Marjanovic and Feijao 20 [(Sonja Marjanovic, Ph.D., Judge Business School, University of Cambridge. Carolina Feijao, Ph.D. in biochemistry, University of Cambridge; M.Sc. in quantitative biology, Imperial College London; B.Sc. in biology, University of Lisbon.) "How to Best Enable Pharma Innovation Beyond the COVID-19 Crisis," RAND Corporation, 05-2020, https://www.rand.org/pubs/perspectives/PEA407-1.html] TDI

As key actors in the healthcare innovation landscape, pharmaceutical and life sciences companies have been called on to develop medicines, vaccines and diagnostics for pressing public health challenges. The COVID-19 crisis is one such challenge, but there are many others. For example, MERS, SARS, Ebola, Zika and avian and swine flu are also infectious diseases that represent public health threats. Infectious agents such as anthrax, smallpox and tularemia could present threats in a bioterrorism context.1 The general threat to public health that is posed by antimicrobial resistance is also well-recognised as an area in need of pharmaceutical innovation. Innovating in response to these challenges does not always align well with pharmaceutical industry commercial models, shareholder expectations and competition within the industry. However, the expertise, networks and infrastructure that industry has within its reach, as well as public expectations and the moral imperative, make pharmaceutical companies and the wider life sciences sector an indispensable partner in the search for solutions that save lives. This perspective argues for the need to establish more sustainable and scalable ways of incentivising pharmaceutical innovation in response to infectious disease threats to public health. It considers both past and current examples of efforts to mobilise pharmaceutical innovation in high commercial risk areas, including in the context of current efforts to respond to the COVID-19 pandemic. In global pandemic crises like COVID-19, the urgency and scale of the crisis – as well as the spotlight placed on pharmaceutical companies – mean that contributing to the search for effective medicines, vaccines or diagnostics is essential for socially responsible companies in the sector. 2 It is therefore unsurprising that we are seeing industry-wide efforts unfold at unprecedented scale and pace. Whereas there is always scope for more activity, industry is currently contributing in a variety of ways. Examples include pharmaceutical companies donating existing compounds to assess their utility in the fight against COVID19; screening existing compound libraries in-house or with partners to see if they can be repurposed; accelerating trials for potentially effective medicine or vaccine candidates; and in some cases rapidly accelerating in-house research and development to discover new treatments or vaccine agents and develop diagnostics tests.3,4 Pharmaceutical companies are collaborating with each other in some of these efforts and participating in global R&D partnerships (such as the Innovative Medicines Initiative effort to accelerate the development of potential therapies for COVID-19) and supporting national efforts to expand diagnosis and testing capacity and ensure affordable and ready access to potential solutions.3,5,6 The primary purpose of such innovation is to benefit patients and wider population health. Although there are also reputational benefits from involvement that can be realised across the industry, there are likely to be relatively few companies that are ‘commercial’ winners. Those who might gain substantial revenues will be under pressure not to be seen as profiting from the pandemic. In the United Kingdom for example, GSK has stated that it does not expect to profit from its COVID-19 related activities and that any gains will be invested in supporting research and long-term pandemic preparedness, as well as in developing products that would be affordable in the world’s poorest countries.7 Similarly, in the United States AbbVie has waived intellectual property rights for an existing combination product that is being tested for therapeutic potential against COVID-19, which would support affordability and allow for a supply of generics.8,9 Johnson & Johnson has stated that its potential vaccine – which is expected to begin trials – will be available on a not-for-profit basis during the pandemic.10 Pharma is mobilising substantial efforts to rise to the COVID-19 challenge at hand. However, we need to consider how pharmaceutical innovation for responding to emerging infectious diseases can best be enabled beyond the current crisis. Many public health threats (including those associated with other infectious diseases, bioterrorism agents and antimicrobial resistance) are urgently in need of pharmaceutical innovation, even if their impacts are not as visible to society as COVID-19 is in the immediate term. The pharmaceutical industry has responded to previous public health emergencies associated with infectious disease in recent times – for example those associated with Ebola and Zika outbreaks.11 However, it has done so to a lesser scale than for COVID-19 and with contributions from fewer companies. Similarly, levels of activity in response to the threat of antimicrobial resistance are still low.12 There are important policy questions as to whether – and how – industry could engage with such public health threats to an even greater extent under improved innovation conditions.

#### COVID incentivizes engineered bioterror- extinction

Walsh, 20 -- Axios Future correspondent [Bryan Walsh, "The coronavirus pandemic reawakens bioweapon fears," Axios, 5-14-2020, https://www.axios.com/coronavirus-pandemic-pathogen-bioweapon-45417c86-52aa-41b1-8a99-44a6e597d3a8.html, accessed 9-7-2020]

The coronavirus pandemic reawakens bioweapon fears

The immense human and economic toll of the COVID-19 pandemic only underscores the threat posed by pathogens that could be deliberately engineered and released.

Why it matters: New technology like gene editing and DNA synthesis has made the creation of more virulent pathogens easier. Yet security and regulation efforts haven't kept pace with the science.

What's happening: Despite some claims by the White House, overwhelming scientific evidence indicates that the novel coronavirus was not accidentally released from a lab or deliberately engineered, but naturally spilled over from an animal source.

That doesn't mean the threat from bioweapons isn't dire. Along with AI, engineered pandemics are widely considered the biggest existential risk facing humanity.

That's in part because a pathogen could be engineered in a lab for maximum contagiousness and virulence, well beyond what would arise through natural selection.

Case in point: a 2018 pandemic simulation put on by the Johns Hopkins Center for Health Security featured a fictional engineered virus called Clade X that combined the contagiousness of the common cold with the virulence of the real-life Nipah virus, which has a mortality rate of 40-75%. The resulting simulated global outbreak killed 150 million people.

COVID-19 isn't anywhere near that fatal, but the pandemic has shown the vulnerability of the U.S. and the world to biological threats both natural and manmade.

"Potential adversaries are of course seeing the same things we’re seeing," says Richard Pilch of the Middlebury Institute of International Studies. "Anyone looking for a radical leveling approach — whether a state actor like North Korea or a motivated terrorist organization — may be influenced by COVID-19 to consider pursuing a biological weapons capability."

Background: Bioweapons were officially banned by the Biological Weapons Convention in 1975, though North Korea is suspected of maintaining an offensive bioweapons program.

A particular concern about biowarfare and bioterror, though, is that many of the tools and methods that could be used to create a weaponized virus are largely indistinguishable from those used in the course of legitimate scientific research. This makes biotechnology "dual-use" — and that much more difficult to safely regulate without cutting off research that could be vitally important.

While earlier bioweapons fears focused on the possibility that a state or terror group could try to weaponize a known dangerous agent like smallpox — which would require somehow obtaining restricted pathogens — new technology means that someone could obtain the genetic sequence of a germ online and synthesize it in the lab.

"If you've been trained in a relevant technical discipline, that means you can make almost any potentially harmful agent that you're aware of," says Kevin Esvelt, a biologist at the MIT Media Lab and a member of the CDC's Biological Agent Containment Working Group. That would include the novel coronavirus that causes COVID-19, which was recently synthesized from its genetic sequence in a study published in Nature.

How it works: Currently, synthetic DNA is ordered through commercial suppliers. But while most suppliers screen DNA orders for the sequences of dangerous pathogens, they're not required to — and not all do, which means safety efforts are "incomplete, inaccurate, and insecure," says Esvelt.

Screening efforts that look for the genetic sequences of known pathogens also wouldn't necessarily be able to detect when synthetic DNA was being used to make something entirely novel and dangerous.

In the near future, desktop DNA synthesizers may be able to generate synthetic DNA in the lab, cutting out the need for commercial suppliers — and potential security screenings.

The democratization of biotechnology could unleash a wave of creativity and innovation, just as the democratization of personal computing did. But it also increases the number of people who could potentially make a dangerous engineered virus, whether deliberately or by accident.

#### 1AR theory is skewed towards the aff – a) the 2NR must cover substance and over-cover theory, since they get the collapse and persuasive spin advantage of the 3min 2AR, b) their responses to my counter interp will be new, which means 1AR theory necessitates intervention. Implications – a) reject 1AR theory since it can’t be a legitimate check for abuse, b) drop the arg to minimize the chance the round is decided unfairly, c) use reasonability with a bar of defense or the aff always wins since the 2AR can line by line the whole 2NR without winning real abuse

### 5

#### CP: The member nations of the World Trade Organization with the exception of the United States should reduce intellectual property protections for COVID-19 medicines. The United States should reduce intellectual property for COVID-19 vaccines.

Solves 99% of the aff – all of their advantages are about vaccine distribution

#### US dominance is secured in biotech now, but China’s closing the gap fast – that allows geopolitical and economic advantages

Scott **Moore** **20** [(Director of the Penn Global China Program at the University of Pennsylvania. Previously, Moore was a Young Professional and Water Resources Management Specialist at the World Bank Group, and Environment, Science, Technology, and Health Officer for China at the U.S.) “China’s Role In The Global Biotechnology Sector And Implications For U.S. Policy” https://www.brookings.edu/wp-content/uploads/2020/04/FP\_20200427\_china\_biotechnology\_moore.pdf]TDI

EXECUTIVE SUMMARY Even by the standards of emerging technologies, **biotechnology has the potential to utterly transform geopolitics, economics**, and society in the 21st century. Yet while the United States has long been the world leader in most segments of the global biotechnology sector, **China is fast becoming a significant player**. This brief assesses the implications of China’s changing role in biotechnology for the United States, which span national security, data security, and economic competitiveness. On current trends the United States is likely to remain the world leader in most biotechnology areas. **However, the gap between China and the U.S. is narrowing in the biotechnology sector,** and U.S. policymakers must boost public investment, liberalize immigration and foreign student visa policies, and enact regulatory reforms to ensure America remains competitive. At the same time, areas like vaccine development and regulation of emerging technologies like synthetic biology present rich opportunities for Sino-U.S. cooperation. INTRODUCTION Thanks to extensive government funding for biomedical research, an unparalleled ability to translate basic research into commercial products and applications, and strong intellectual property protections, the United States has been the dominant global player in developing and commercializing biotechnology for decades.1 This dominance is reflected in the fact that United States accounted for almost half of all biotechnology patents filed worldwide from 1999 to 2013.2 However, in the intervening years, and just as in the case of artificial intelligence and other emerging technologies, other nations, including South Korea and Singapore, have invested heavily in developing their biotechnology sectors and industries. These efforts pale, however, in comparison to those of China, and the sheer size and scale of the Chinese biotechnology industry pose a range of economic, security, and regulatory issues for American policymakers. The determination of China’s one-party state to become a leading player in biotechnology is reflected by the rapid growth in investment in the sector. Some estimates claim that collectively, **China’s** central, local, and provincial **governments have invested over $100 billion in life sciences** research and development. Regardless of the true figure, official encouragement has led to a torrid place of investment. In just the two-year period from 2015 to 2017, venture capital and private equity investment in the sector totaled some $45 billion.3 The value of commercial deals concluded in the fields of biology, medicine and medical machine technology, meanwhile increased from 25.8 billion renminbi (RMB), or $3.6 billion, in 2011 to over 75 billion RMB ($10.6 billion) in 2017.4 Annual research and development expenditures by Chinese pharmaceutical firms, the foundation of the biotechnology sector, rose from some 39 billion RMB in 2014 ($5.5 billion) to over 53 billion RMB (US$7.5 billion) by 2017. Expenditure on new product development among these firms, an important indicator of future growth potential, increased from just over 40 billion RMB ($5.6 billion) to almost 60 billion ($8.4 billion).5 By Western standards, some of these figures are still low. Swiss drugmaker Roche, the world leader in biotechnology research and development, spent some $11 billion in 2018 alone.6 As these figures suggest, the development of China’s biotechnology sector paints a nuanced picture for U.S. policymakers. On one hand, the sector’s rapid growth, and high-level commitment to continued investment, means that China will inevitably become an increasingly important player in the global biotechnology sector, **with implications for national security, economic competitiveness, and regulation**. An executive from In-Q-Tel, the U.S. government’s inhouse national security venture capital fund, warned Congress in a November 2019 hearing, for example, that China “intends to own the biorevolution… and they are building the infrastructure, the talent pipeline, the regulatory system, and the financial system they need to do that.”7 The CEO of European drugmaker AstraZeneca has similarly opined that “Much of [China’s] innovation in the last three to four years has been ‘me too,’ but now on the horizon we can see firstin-class innovation.”8 Yet on the other hand, while China’s biotechnology sector will almost certainly continue to grow in scale, sophistication, and competitiveness, there is little reason to believe on current trends that the United States will lose its edge in the sector. Indeed, the biggest risk to the global competitiveness of the U.S. biotechnology industry likely comes from the prospect of declining public investment and reduced mobility for world-class researchers and industry professionals. Moreover, the COVID-19 crisis underscores both the importance of continued investment in biotechnology and the many challenges to promoting effective international cooperation on global health security. This brief first examines the key policies and actors in China’s biotechnology sector, then offers an assessment of the sector’s current capabilities and future trends, and finally further explores the implications of developments in Chinese biotechnology for U.S. policy.

#### The aff’s waiving of IP doesn’t solve but it does give away sensitive national security information that allows China to lead ahead in biotech

Josh Rogin 4-8. [(Washington Post Columnist covering National Security Issues.) “Opinion: The wrong way to fight vaccine nationalism” https://www.washingtonpost.com/opinions/global-opinions/the-wrong-way-to-fight-vaccine-nationalism/2021/04/08/9a65e15e-98a8-11eb-962b-78c1d8228819\_story.html ] TDI

Americans will not be safe from covid-19 until the entire world is safe. That basic truth shows why vaccine nationalism is not only immoral but also counterproductive. But the simplest solutions are rarely the correct ones, **and some countries are using the issue to advance their own strategic interests**. The Biden administration must reject the effort by some nations to turn our shared crisis into their opportunity. As the inequities of vaccine distribution worldwide grow, a group of more than 50 developing countries led by India and South Africa is pushing the World Trade Organization to dissolve all international intellectual property protections for pandemic-related products, which would include vaccine research patents, manufacturing designs and technological know-how. The Trump administration rejected the proposal to waive the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) for the pandemic when it was introduced in October. Now, hundreds of nongovernmental organizations and dozens of Democratic lawmakers are pushing the Biden administration to support the proposal. But many warn **the move would result in the United States handing over a generation of advanced research** — much of it funded by the U.S. taxpayer — **to** our country’s greatest competitors, above all **China**. In Congress, there’s justified frustration with the United States’ failure to respond to China’s robust vaccine diplomacy, in which Beijing has conditioned vaccine offers to pandemic-stricken countries on their ignoring security concerns over Chinese telecom companies or abandoning diplomatic recognition of Taiwan. There’s also a lot of anger at Big Pharma among progressives for profiting from the pandemic. “We are in a race against time, and unfortunately Big Pharma is standing in the way of speedily addressing this problem,” Rep. Jan Schakowsky (D-Ill.), who supports the effort to waive intellectual property protections, told me in an interview. “I think the real security issue is that while the United States balks in making sure that we help ourselves, that these adversaries will just jump right in.” Schakowsky argued that alternative measures for helping poor countries manufacture vaccines are simply not moving fast enough to save lives and that the United States has a duty to respond. House Speaker Nancy Pelosi (D-Calif.) personally conveyed her support for the waiver to President Biden, Schakowsky said. But Big Pharma is just one piece of the puzzle. Countries such as India and South Africa have been trying to weaken WTO intellectual property protections for decades. **The mRNA technology that underpins the Pfizer and Moderna vaccines was funded initially by the Defense Advanced Research Projects Agency and has national security implications.** Inside the Biden administration, the National Security Council has already convened several meetings on the issue. The waiver is supported by many global health officials in the White House and at the U.S. Agency for International Development, who believe the United States’ international reputation is suffering from its perceived “America First” vaccine strategy. On Wednesday, U.S. Trade Representative Katherine Tai spoke with WTO Director General Ngozi Okonjo-Iweala about the waiver issue. USTR is convening its own interagency meetings on the issue, which many see as a move to reassert its jurisdiction over WTO matters. If and when this does get to Biden’s desk, he will also hear from national security officials who believe that waiving TRIPS would result in the forced transfer of national security-sensitive technology to China, **a country that strives to dominate the biotechnology** ***field*** as part of its Made in China 2025 strategy. **Once countries such as China have this technology, they will apply their mercantilist industrial models to ensure their companies dominate these strategically important industries, potentially erasing thousands of U.S. jobs.** “We would be delivering a competitive advantage to countries that are increasingly viewed as our adversaries, at taxpayer expense, when there are other ways of doing this,” said Mark Cohen, senior fellow at the University of California at Berkeley Law School. **A preferable approach would be to build more vaccine-manufacturing capacity** in the United States and then give those vaccines to countries in need, said Cohen. The U.S. pharmaceutical industry would surely benefit, but **that’s preferable to being dependent on other countries when the next pandemic hits.** “If there’s anything that the pandemic has taught us, it’s that we need to have a robust supply chain, for ourselves and for the world generally,” Cohen said. What’s more, it’s not clear that waiving the TRIPS agreement for the pandemic would work in the first place. Bill Gates and others involved in the current vaccine distribution scheme have argued that it would not result in more vaccines, pointing out that licensing agreements are already successfully facilitating cooperation between patent-holding vaccine-makers and foreign manufacturers. Critics respond that such cooperation is still failing to meet the urgent needs in the developing world. Vaccine equity is a real problem, but waiving intellectual property rights is not the solution. If the current system is not getting shots into the arms of people in poor countries, we must fix that for their sake and ours. But the pandemic and our responses to it have geopolitical implications, whether we like it or not. **That means helping the world and thinking about our strategic interests at the same time.**

#### US leniency in vaccine IPR jeopardizes competitiveness across sectors – green tech, AI, semiconductors, aerospace, biotech, and robotics

Duesterberg 21 Thomas J. (Thomas J. Duesterberg is a senior fellow at the Hudson Institute. An expert on trade, manufacturing, economics and foreign policy, he leads project work on trade with Europe and China.), 6-3-2021, "Biden says he wants to out-compete China — so why attack US medical innovation?," TheHill, <https://thehill.com/opinion/healthcare/556043-biden-says-he-wants-to-out-compete-china-so-why-attack-us-medical> ] TDI

Congress has been burning the midnight oil to pass legislation aimed at investing billions of dollars to out-compete China in critical sectors and champion American innovation. Yet at the very moment that value of the U.S. model of medical innovation is being most vindicated, that model has come under attack from our own government, as well as long-time critics in the developing world. These critics are proposing to waive the intellectual property (IP) rights guaranteed by the World Trade Organization (WTO) for vaccines and treatments for COVID-19 — a move that would undermine the economic model of innovation that produced the historically unprecedented effectiveness, and speed to market, of vaccines developed by major U.S. and British firms. The assault — spearheaded by South Africa and India — is not only unlikely to help get more vaccines to the developing world in a timely manner, but has the potential to unravel decades of progress in building an internationally agreed regime for IP rights, which incentivizes and rewards fundamental research and long-term capital investment. This could harm not only the medical products industry, but also spill over to other high-technology sectors that require long years of research and huge, risky capital investments before bearing fruit. Proponents of the waiver argue that it would facilitate more rapid production and distribution of much-needed shots for hard hit regions in South Asia and Africa. However, it’s well-established that any increased production — even in India, which is home to the world’s largest manufacturer of vaccines — would require at least a year of preparation and investment to begin large-scale production of the newer vaccines. What’s more, opponents to the waiver — led by European countries, home to the world’s second leading medicines industry — can delay the waiver approval for months at the WTO, if not bury the idea altogether. And with plans in place to ramp up production of approved vaccines in the U.S., Europe and India, there will be sufficient surplus production to start exporting to the global South later this summer. Any forced transfer of the new vaccines technologies almost certainly will benefit China, with its growing manufacturing prowess and ambitions to spend whatever is required to offset the damage to its reputation resulting from its attempt to mask the severity of the SARS-CoV-2 virus in the early days of the pandemic. A closer look at the South Africa-India waiver proposal, which is supported by some 100 other nations, gives insight into the longer-term and broader danger of the reversal of IP rights protections for advanced technologies. Their language tabled at the WTO in late May calls for waiving not only the fundamental patents behind COVID-19 vaccines but extending the waiver to products including “diagnostics, therapeutics, medical devices, personal protective equipment” and to the raw materials and “means of manufacture” of anything used to contain this virus. It is not a huge leap of logic to speculate that such broad waivers, in the future, could be suggested for any severe threat to world health, with the example of treatments for AIDS as a reminder. The proposed waiver would extend for a period of “at least three years,” and could be lifted only by agreement in the General Council of the WTO, which requires unanimous consent of all 164 members and rarely has been achieved since its inception in 1995. It is hard to imagine that once the long-sought goal of removing IP rights protection for medical technologies — supported by developing countries and by progressive groups in developed countries alike — is achieved, it can be reversed easily. Other high-technology industries characterized by the need for long-term investments in basic research and the development of new manufacturing technologies such as semiconductors, medical equipment or aerospace, or nascent industries such as quantum computing, robotics or 3D printing, would be wise to pay attention to the debate over waiving IP rights for COVID-19 vaccines. While the acute and existential issues arising from a pandemic represent a perhaps unique set of circumstances, one can conceive of arguments to justify the social goal of sharing some newer technologies. For example, if innovations in “green hydrogen,” more powerful batteries, or more efficient photovoltaic cells are achieved and promise early returns to combat climate change, the advantages of sharing the technologies for the global common good could be adduced to justify waivers in the appropriate enabling technologies. Or, would a waiver be considered for the advanced semiconductors and computers required for artificial intelligence and needed to find cures for cancer and to perfect climate mitigation strategies? U.S. support for the vaccine IP rights waiver is especially baffling because it affects one of its most successful industries in terms of global technology leadership and market share, responsible for so many advances of enormous benefit for global health. It is not a mystery why the rapid discovery and ramping up of production for new vaccines came from the unique U.S. innovation ecosystem, in contrast to the more highly regulated and centrally controlled health care sectors in much of the rest of the world. There are better ways to achieve the goal of eradicating COVID-19, and U.S. actions would be more effective if directed toward expanding production and assisting in the distribution of vaccines. This includes the use of foreign aid and help with purchasing agreements for countries in the global South, as well as facilitating licensing agreements. (For example, Johnson & Johnson is arranging a major project with Indian manufacturers, which has the support of the other Quad countries, Japan, Australia and the U.S.) If Congress truly cares about protecting American innovation, it ought to assert its constitutional authority over international trade to block this danger to domestic high-technology industries.

#### China will convert biotechnology gains to military advantages, undermining US primacy – specifically true in the context of vaccines

Mercy A. Kuo 2017 [(Executive Vice President at Pamir Consulting.) “The Great US-China Biotechnology and Artificial Intelligence Race” <https://thediplomat.com/2017/08/the-great-us-china-biotechnology-and-artificial-intelligence-race/>] TDI

Trans-Pacific View author Mercy Kuo regularly engages subject-matter experts, policy practitioners, and strategic thinkers across the globe for their diverse insights into the U.S. Asia policy. This conversation with Eleonore Pauwels – Director of Biology Collectives and Senior Program Associate, Science and Technology Innovation Program at the Wilson Center in Washington D.C. – is the 104th in “The Trans-Pacific View Insight Series.” Explain the motivation behind Chinese investment in U.S. genomics and artificial intelligence (AI). With large public and private investments inland and in the U.S., China plans to become the next AI-Genomics powerhouse, which indicates that these technologies will soon converge in China. China’s ambition is to lead the global market for precision medicine, **which necessitates acquiring strategic tech**nological and human capital in both genomics and AI. And the country excels at this game. A sharp blow in this U.S.-China competition happened in 2013 when BGI purchased Complete Genomics, in California, with the intent to build its own advanced genomic sequencing machines, therefore securing a technological knowhow mainly mastered by U.S. producers. There are significant economic incentives behind China’s heavy investment in the increasing convergence of AI and genomics. This golden combination will drive precision medicine to new heights by developing a more sophisticated understanding of how our genomes function, leading to precise, even personalized, cancer therapeutics and preventive diagnostics, such as liquid biopsies. By one estimate, the liquid biopsy market is expected to be worth $40 billion in 2017. Assess the implications of iCarbonX of Shenzhen’s decision to invest US$100 million in U.S.-company PatientsLikeMe relative to AI and genomic data collection. iCarbonX is a pioneer in AI software that learns to recognize useful relationships between large amounts of individuals’ biological, medical, behavioral and psychological data. Such a data-ecosystem will deliver insights into how an individual’s genome is mutating over time, and therefore critical information about this individual’s susceptibilities to rare, chronic and mental illnesses. In 2017, iCarbonX invested $100 million in PatientsLikeMe, getting a hold over data from the biggest online network of patients with rare and chronic diseases. If successful, this effort could turn into genetic gold, making iCarbonX one of the wealthiest healthcare companies in China and beyond. The risk factor is that iCarbonX is handling more than personal data, but potentially vulnerable data as the company uses a smartphone application, Meum, for customers to consult for health advice. Remember that the Chinese nascent genomics and AI industry relies on cloud computing for genomics data-storage and exchange, creating, in its wake, new vulnerabilities associated with any internet-based technology. This phenomenon has severe implications. How much consideration has been given to privacy and the evolving notion of personal data in this AI-powered health economy? And is our cyberinfrastructure ready to protect such trove of personal health data from hackers and industrial espionage? In this new race, will China and the U.S. have to constantly accelerate their rate of cyber and bio-innovation to be more resilient? Refining our models of genomics data protection will become a critical biosecurity issue. Why is Chinese access to U.S. genomic data a national security concern? **Genomics** and computing research **is inherently dual-use, therefore a strategic advantage in a nation’s security arsenal.** Using AI systems to understand how the functioning of our genomes impacts our health **is of strategic importance for biodefense.** This knowledge will lead to increasing developments at the forefront of medical countermeasures, **including vaccines**, antibiotics, and targeted treatments relying on virus-engineering and microbiome research. Applying deep learning to genomics data-sets could help geneticists learn how to use genome-editing (CRISPR) to efficiently engineer living systems, but also to treat and, even “optimize,” human health, **with potential applications in military enhancements**. A $15 million partnership between a U.S. company, Gingko Bioworks, and DARPA aims to genetically design new probiotics as a protection for soldiers against a variety of stomach bugs and illnesses. China could be using the same deep learning techniques on U.S. genomics data to better comprehend how to develop, patent and manufacture tailored cancer immunotherapies in high demand in the United States. Yet, what if Chinese efforts venture into understanding how to impact key genomics health determinants relevant to the U.S. population? **Gaining access to increasingly large U.S. genomic data-sets gives China a knowledge advantage into leading the next steps in bio-military research.** Could biomedical data be used to develop bioweapons? Explain. Personalized medicine advances mean that personalized bio-attacks are increasingly possible. The combination of AI with biomedical data and genome-editing technologies will help us predict genes most important to particular functions. Such insights will contribute to knowing how a particular disease occurs, how a newly-discovered virus has high transmissibility, but also why certain populations and individuals are more susceptible to it. Combining host susceptibility information with pathogenic targeted design, **malicious actors could engineer pathogens that are tailored to overcome the immune system or the microbiome of specific populations.**

#### Primacy and allied commitments solve arms races and great power war – their Brands card

## Case

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### Credibility

#### The US has structurally undermined WTO legitimacy

Baschuk 2/22 [(Bryce, reporter for Bloomberg Economics based in Geneva, Switzerland, has been published in Bloomberg, the Washington Times, United Press International and National Public Radio) “Biden Picks Up Where Trump Left Off in Hard-Line Stances at WTO,” Bloomberg, 2/22/2021] TDI

President Joe Biden’s administration dashed hopes for a softer approach to the World Trade Organization by pursuing a pair of his predecessor’s strategies that critics say risk undermining the international trading system.

The U.S. delegation to the WTO, in a statement Monday obtained by Bloomberg, backed the Trump administration’s decision to label Hong Kong exports as “[Made in China](https://www.bloomberg.com/news/articles/2020-10-30/hong-kong-takes-formal-wto-action-on-u-s-made-in-china-order)” and said the WTO had no right to mediate the matter because the organization’s rules permit countries to take any action to protect their “essential security interests.”

“The situation with respect to Hong Kong, China, constitutes a threat to the national security of the United States,” the U.S. delegation said. “Issues of national security are not matters appropriate for adjudication in the WTO dispute-settlement system.”

Prior to 2016, WTO members generally steered clear of defending their trade actions on the basis of national security because doing so could encourage other nations to pursue protectionist policies that have little or nothing to do with hostile threats.

That changed in 2018, when the Trump administration triggered a cold war-era law to justify tariffs on foreign imports of steel and aluminum. In response, a handful of U.S. trade partners, including Canada, the EU, and China filed disputes at the WTO and a ruling in those cases is expected later this year.

Since then, more nations -- including Saudi Arabia, India, Russia and others -- have cited the WTO’s national-security exemption in regional trade fights, leading trade experts to warn that such cases could erode the organization’s ability to mediate disputes.

The Biden administration on Monday said the U.S. has consistently argued that national-security disputes are not subject to WTO review because it would infringe on a member’s right to determine what is in its own security interests.

In spite of the U.S. objection, the WTO granted Hong Kong’s dispute inquiry and will establish a panel of experts to deliberate the matter and render a decision, which could take two to three years.

At the same meeting, the Biden administration said it would not agree to appoint new members to the WTO’s appellate body, a seven-member panel of experts who until 2019 had the final say on trade disputes involving billions of dollars worth of international commerce.

The Biden administration said it could not do so because the U.S. “continues to have systemic concerns” with the functioning of the appellate body as have all previous administrations over the past 16 years.

Though the statement was not entirely unexpected, it confirms America’s bipartisan frustration with the functioning of the WTO appellate body and the new administration’s willingness to block new panelists until changes can be agreed.

Once Katherine Tai is confirmed as the U.S. Trade Representative, her office “looks forward to working with” WTO Director-General Ngozi Okonjo-Iweala to tackle the problems with WTO dispute settlement, including the unresolved issues over appellate-body overreach, USTR spokesman Adam Hodge said in an email. “These are long-standing, bipartisan concerns that we hope our trading partners will work with us to address,” he said.

The Trump administration broke precedent when it refused to consider any nominees to fill vacancies on the panel until there weren’t enough to sign off on new rulings. As a result, the WTO’s dispute-settlement system has been critically damaged because WTO members are now free to veto any adverse dispute rulings by appealing them into a legal void created by the appellate body’s paralysis.

#### Trade is irrelevant for war

Katherine Barbieri 13, Associate Professor of If the Biden administration wants to achieve its stated goals, it will remove Trump’s protectionist measures, work multilaterally, strengthen US infrastructure, invest in workforce skills and education, and expand America’s research capabilities. Political Science at the University of South Carolina, Ph.D. in Political Science from Binghamton University, “Economic Interdependence: A Path to Peace or Source of Interstate Conflict?” Chapter 10 in Conflict, War, and Peace: An Introduction to Scientific Research, google books

How does interdependence affect war, the most intense form of conflict? Table 2 gives the empirical results. The rarity of wars makes any analysis of their causes quite difficult, for variations in interdependence will seldom result in the occurrence of war. As in the case of MIDs, the log-likelihood ratio tests for each model suggest that the inclusion of the various measures of interdependence and the control variables improves our understanding of the factors affecting the occurrence of war over that obtained from the null model. However, the individual interdependence variables, alone, are not statistically significant. This is not the case with contiguity and relative capabilities, which are both statistically significant. Again, we see that contiguous dyads are more conflict-prone and that dyads composed of states with unequal power are more pacific than those with highly equal power. Surprisingly, no evidence is provided to support the commonly held proposition that democratic states are less likely to engage in wars with other democratic states.¶ The evidence from the pre-WWII period provides support for those arguing that economic factors have little, if any, influence on affecting leaders’ decisions to engage in war, but many of the control variables are also statistically insignificant. These results should be interpreted with caution, since the sample does not contain a sufficient number wars to allow us to capture great variations across different types of relationships. Many observations of war are excluded from the sample by virtue of not having the corresponding explanatory measures. A variable would have to have an extremely strong influence on conflict—as does contiguity—to find significant results. ¶ 7. Conclusions This study provides little empirical support for the liberal proposition that trade provides a path to interstate peace. Even after controlling for the influence of contiguity, joint democracy, alliance ties, and relative capabilities, the evidence suggests that in most instances trade fails to deter conflict. Instead, extensive economic interdependence increases the likelihood that dyads engage in militarized dispute; however, it appears to have little influence on the incidence of war.

#### Also empirics flow neg, WW2 proves where countries abandened econ allies ie Japan

#### Trade wars don’t go to hot wars

**Dayen 17**, New Republic contributor (David “Trump Is Signaling a Trade War, but It’s Not as Disastrous as You May Think”, https://www.thenation.com/article/trump-is-signaling-a-trade-war-but-its-not-as-disastrous-as-you-may-think/)

Can Trump enact tariffs on his own? Though it would appear to contradict the Origination Clause of the Constitution, Congress has delegated that authority in enough pieces of legislation that Trump could probably raise import duties unilaterally. But what would be the practical effect? Hard-core free traders paint a picture of cataclysm. Tariffs will launch trade wars, increase prices, and destroy the economy. This is all hard-wired into the pro-globalization worldview. Thomas Friedman once famously admitted that he wrote a column supporting a free-trade agreement with Central America without knowing a thing about it: “I just knew two words: free trade,” he told an audience. Presumably the opposite is true for Friedman: He sees one word, “tariff,” and immediately screams in horror. Oddly, many of those same proponents of free trade favor a policy that looks very much like a tariff. The Republican corporate-tax revamp includes something called a border-adjustment tax, which would impose a 20 percent tax on imports while eliminating a tax on exports. Like with tariffs, the goal appears to be to encourage domestic production. In fact, the tax would be much higher than the 5-10 percent tariff being floated. (It also might be illegal under the current global trade regime.) Supporters of border adjustment, particularly economists, argue that it will end up trade neutral, because the exchange rate will fluctuate in response to the tax. In other words, though the tax would make American-made goods more attractive, the value of the dollar would increase, leveling that out. Few of these economists seem to carry over the same analysis to the effects of a tariff. I don’t understand why. There’s no reason to doubt the fact that, if Trump imposed an across-the-board tariff, the dollar would strengthen, thus nullifying the desired effect. Indeed, before Trump has even taken office, the dollar has risen to a 14-year high, in anticipation of a more protectionist stance. Incidentally, for all the one-off announcements by Trump (however factually challenged) about hundreds of jobs he has allegedly rescued here or there, this one development—the rise in the dollar—has likely caused the loss of hundreds of thousands of manufacturing jobs, under standard economic theory. Looked at this way, higher tariffs wouldn’t cause a recession (as Paul Krugman has acknowledged), but would be somewhat pointless, with currency exchanges shifting to account for any changes. Trade wars might temporarily reduce efficiency, as domestic supply chains would have to be rebuilt, but they’re unlikely to radically alter the balance of trade on their own. There are other variables here. Importers and exporters who have lived in a world of floating exchange rates for decades may be fairly nimble in adjusting to them. On the downside, Krugman explains that raising tariffs could inhibit capital flows, meaning that investors will place less money into US markets. You can see how that might reduce economic growth. But Jeff Spross points out that America currently has a problem with too much foreign money flowing in; reducing the flow could arguably make the economy more stable. Trump could also seek to prevent unlawful currency manipulation (not necessarily from China, but from other Asian nations) that artificially disadvantages US manufacturing. The real unknown here is what Trump would do with all that tariff revenue. The border adjustment tax at 20 percent is assumed to bring in $1 trillion over the 10-year budget window. So a tariff of even one-quarter or one-half that size would draw significant funds. What’s the plan for it? Would it get plowed into job-creating investments? Tax cuts for the wealthy? That’s a significant variable as well. We do know that the same pundits who confidently predicted that globalization would be a win-win policy for America repeatedly got it wrong. Those on the losing side saw their jobs shipped out and factories closed down, and weren’t given the kind of assistance needed to offset the disruption. So it’s worth being a little skeptical of the warnings coming from the same corners now. I don’t have a ton of faith in the Trump team to necessarily make their trade agenda work (especially as corporate interests will seek to co-opt the redesigned policies in ways even friendlier to their bottom line). And I think there are smarter ways to balance our trade deficit than a tariff strategy which will just run up against currency exchange rates. But the hysteria accompanying these tariffs (which wasn’t at all present when President Obama imposed his own tariffs on Chinese tires and steel) seems far beyond what little we can assume about the actual results of such a strategy.

### Developing Economies - India

#### Restricting IP protections undermines innovation and profit margins – turns case by precluding vaccine distribution to developing countries.

Cueni 12/10 [(Thomas, Director General of IFPMA, chair of the AMR Industry Alliance, Industry Co-Chair APEC Biopharmaceutical Working Group on Ethics, MA in politics from the London School of Economics) “The Risk in Suspending Vaccine Patent Rules,” New York Times, 12/10/2020] TDI

It is unclear how suspending patent protections would ensure fair distribution. But what is clear is that if successful, the effort would jeopardize future medical innovation, making us more vulnerable to other diseases.

Intellectual property rights, including patents, grant inventors a period of exclusivity to make and market their creations. By affording these rights to those who create intangible assets, such as musical compositions, software or drug formulas — people will invent more useful new things.

Development of a new medicine is risky and costly. Consider that scientists have spent decades — and billions of dollars — working on Alzheimer’s treatments, but still have little to show for it. The companies and investors who fund research shoulder so much risk because they have a shot at a reward. Once a patent expires, generic companies are free to produce the same product. Intellectual property rights underpin the system that gives us all new medicines, from psychiatric drugs to cancer treatments.

In trying to defend these rights, the drug industry has made mistakes in the past that have lost people’s trust. More than 22 years ago, for example, a group of drug companies sued the South African government for trying to import cheaper anti-AIDS drugs amid an epidemic. With price standing between patients and survival, the suit, which the companies eventually dropped, was a terrible misjudgment. The current situation is not parallel.

Several major drug companies, including AstraZeneca, GlaxoSmithKline and Johnson & Johnson, have pledged to offer their vaccines on a not-for-profit basis during the pandemic. Others are considering differential pricing for different countries

. As of last month, four major pharmaceutical companies had already agreed to eventually produce at least three billion vaccine doses for low- and middle-income nations, according to one analysis.

In South Africa and India, pharmaceutical companies are already working with local partners to make their vaccines available. Johnson & Johnson has entered into a technology transfer partnership for its candidate vaccine with South Africa’s Aspen Pharmacare, and AstraZeneca has reached a licensing agreement with the Serum Institute of India to develop up to 1 billion doses of its vaccine for low and middle-income countries.

Companies can afford to license patents for free, or sell drugs at cost, precisely because they know that their intellectual property will be protected. That’s not a flaw in the system; it’s how the system ensures that pharmaceutical research will continue to be funded.

**COVID reduces the risk of conflict.**

**Gul 20**. [(Ayaz Gul) “Kashmiri Leader: COVID-19 Lowers Chances of Pakistan-India War” VOA News. April 28, 2020. <https://www.voanews.com/south-central-asia/kashmiri-leader-covid-19-lowers-chances-pakistan-india-war>] TDI

ISLAMABAD - Pakistan and India are locked in almost daily military clashes across their Kashmir frontier, but the president of the Pakistani-ruled part of the disputed territory says the coronavirus pandemic has for now **diminished chances, if any, of the tensions escalating into a full-blown war.** Islamabad and New Delhi routinely accuse each other of firing the first shot that started the clashes in violation of a 2003 mutual truce across what is referred to as the Kashmir Line of Control (LoC). Critics say the increased violence in recent years, however, already has rendered the truce ineffective. The clashes have caused dozens of casualties on both sides, mostly civilians living in villages close to the LoC. “**I don’t foresee a war in the near future**,” said President Masood Khan of Azad (independent) Jammu and Kashmir (AJK), the official name Pakistan uses for the part of the divided region it administers. India controls the remaining two-thirds of the largely Muslim Himalayan region, claimed by both of the nuclear-armed rival nations. “Right now, the world is **preoccupied with the COVID-19 pandemic**, and nobody **seriously expects India and Pakistan to go to war**. And we do not know what the world would look like once this pandemic is over,” Khan told VOA in an interview at his camp office in the Pakistani capital.

### Developing Economies - Pandemics

#### Squo solves – plan increases price of scarce materials and results in costly, ineffective facilities

Mcmurry-Heath 8/18 (Michelle Mcmurry-Heath, [physician-scientist and president and CEO of the Biotechnology Innovation Organization.], 8-18-2021, “Waiving intellectual property rights would harm global vaccination“, STAT, accessed: 8-19-2021, https://www.statnews.com/2021/08/18/waiving-intellectual-property-rights-compromise-global-vaccination-efforts/) ajs

Covid-19 vaccines are already remarkably cheap, and companies are offering them at low or no cost to low-income countries. Poor access to clinics and transportation are barriers in some countries, but the expense of the shot itself is not. In fact, if the World Trade Organization grants the IP waiver, it could make these vaccines more expensive.

Here’s why. Before Covid-19 emerged, the world produced at most [5.5 billion doses](https://www.barrons.com/articles/a-plan-to-break-the-vaccine-manufacturing-bottleneck-51621952245) of various vaccines every year. Now the world needs an additional [11 billion doses](https://www.who.int/director-general/speeches/detail/director-general-s-opening-remarks-at-the-g7-summit---12-june-2021) — including billions of doses of mRNA vaccines that no one had ever mass-manufactured before — to fully vaccinate every eligible person on the planet against the new disease.

Even as Covid-19 vaccines were still being developed, pharmaceutical companies began retrofitting and upgrading existing facilities to produce Covid-19 vaccines, at a cost of $40 to $100 million each. Vaccine developers also licensed their technologies to well-established manufacturers, like the Serum Institute of India, to further increase production. As a result, almost every facility in the world that can quickly and safely make Covid-19 vaccines is already doing so, or will be in the next few months.

The cutting-edge mRNA vaccines from Moderna and Pfizer-BioNTech face an even bigger capacity issue. Since the underlying technology is new, there are no mRNA manufacturing facilities sitting idle with operators just waiting for licensing agreements to turn on the machines. Nor are there trained personnel to run them or ensure safety and quality control. Embedding delicate mRNA vaccine molecules inside lipid nanoparticle shells at temperatures colder than Antarctica isn’t as easy as following a recipe from Bon Appetit.

Another big barrier to producing more shots is a shortage of raw materials. Suspending intellectual property protections and allowing any manufacturer to try to produce these vaccines, regardless of preparedness or experience, would increase the demand for scarce raw materials, driving up prices and impeding production.

Nor could all companies that suddenly get a green light due to suspended intellectual property rights produce vaccines as cheaply or quickly as existing manufacturers. Building a new vaccine manufacturing facility costs about $700 million, takes many months — if not years — to build and, once opened, requires another [four to six months](https://www.americanprogress.org/issues/healthcare/reports/2020/07/28/488196/comprehensive-covid-19-vaccine-plan/) to start producing vaccine doses. And because negotiations surrounding the WTO waiver, which began this summer, could take until December before they are completed, it wouldn’t be until well into 2023 or later that any additional doses would become available.

That’s slower than our current production rate. According to a report from Duke University’s [Global Health Innovation Center](https://launchandscalefaster.org/covid-19/vaccinemanufacturing), companies are on track to manufacture enough shots in 2021 to fully vaccinate at least 70% of the global population against Covid-19 — the level required to achieve herd immunity.

Covid-19 vaccines are saving millions of lives and protecting trillions of dollars of economic activity for an exceptionally low cost

. Israel, for example, which has one of the world’s highest vaccination rates, paid [$23.50 per dose](https://www.timesofisrael.com/israel-said-to-be-paying-average-of-47-per-person-for-pfizer-moderna-vaccines/) for early shipments, for a total of about $315 million. That’s approximately equal to the gross domestic productivity losses incurred during [just two days of shutdowns](https://www.bmj.com/content/372/bmj.n281) in the country.

Many countries are buying shots for under $10 per dose. India and South Africa — the two countries leading the petition to gut IP rights — are paying just $8 and $5.25 per dose, respectively. For reference, a regular flu shot costs about $14 in the United States, and pediatric vaccines average about $55 per dose.

Meanwhile, low-income countries that can’t afford even modest prices are getting their vaccines at no charge. [COVAX](https://www.who.int/initiatives/act-accelerator/covax), the international nonprofit vaccine distributor, aims to deliver 2 billion doses to developing nations by the end of the year.

President Biden vowed to make America the world’s [“arsenal of vaccines.”](https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/05/17/remarks-by-president-biden-on-the-covid-19-response-and-the-vaccination-program-4/) The U.S. has already committed $4 billion to COVAX, has donated more than 100 million vaccine doses abroad, and is on track to donate [500 million more](https://www.npr.org/sections/goatsandsoda/2021/08/03/1023822839/biden-is-sending-110-million-vaccines-to-nations-in-need-thats-just-a-first-step) by the end of summer. Other countries are following the administration’s leadership and ramping up their donations.