**Interp:** **The affirmative debater must disclose the plan text and framework 30 minutes before the round. To clarify, disclosure can occur on the wiki or over messages.**

**Violation: ss**

**1] Evidence Ethics – Disclosure is the only way to verify that cards aren’t miscut or highlighted or bracketed unethically. That’s a voter – maintaining ethical ev practices is key to being good academics and we should be able to verify you didn’t cheat**

**2] Depth of clash – allows debaters to have specific researched objections to the 1AC evidence – that leads to better ev comparison – o/ws because thinking on your feet is non-unique; we still have to do that for responses and CX**

**3] Reciprocity – they get infinite pre-round prep to write the 1AC and we get none to research it**

**4] Education – a) their model incentivizes terrible “one-and-done” affs that are intellectually bankrupt and decrease education – proves they just want the ballot; b) o/ws claims of innovation because innovation is only valuable if the ideas are valuable.**

**Voters are education – it’s why schools fund debate – and fairness – that’s a threshold issue because otherwise you have no obligation to fairly evaluate their arguments**

**Paradigm issues**

**DTD**

**1] Actual abuse - I had to alter my strat to run theory**

**2] Deters future abuse – norm-setting**

**3] DTA is DTD – it’s the 1AC**

**4] At minimum if we’re winning any part of the shell they can’t weigh case; A] lack of preround prep means their truth claims are untested which you should presume them false; B] 1AR extensions look stronger than they really are b/c they kept me from cutting specific evidence to challenge their link chain**

#### Competing interps: Reasonability is arbitrary and encourages judge intervention since there’s no clear norm.

#### No RVIs – a] illogical, you don’t win for proving that you meet the burden of being fair, logic outweighs since it’s a prerequisite for evaluating any other argument, b] RVIs incentivize baiting theory and prepping it out which leads to maximally abusive practices.

# 2nd off

#### Counterplan text: The member nations of the World Trade Organization ought to reduce intellectual property protections for medicines except for cannabis, medical marijuana, and medicines containing chemicals from cannabis by implementing a one-and-done approach for patent protection.

#### It competes – weed is a medicine and is used in medicine

WebMD 20 [WebMD Medical Reference, WebMD is an American corporation known primarily as an online publisher of news and information pertaining to human health and well-being. The site includes information pertaining to drugs. It is one of the top healthcare websites by unique visitors. It was founded in 1998 by internet entrepreneur Jeff Arnold., August 20, 2020, "Medical Marijuana FAQ,", WebMD LLC, https://www.webmd.com/a-to-z-guides/medical-marijuana-faq, 8-21-2021] //WHS MR

What is medical marijuana? Medical marijuana uses the marijuana plant or chemicals in it to treat diseases or conditions. It's basically the same product as recreational marijuana, but it's taken for medical purposes. The marijuana plant contains more than 100 different chemicals called cannabinoids. Each one has a different effect on the body. Delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) are the main chemicals used in medicine. THC also produces the "high" people feel when they smoke marijuana or eat foods containing it. What is medical marijuana used for? Researchers are studying whether medical marijuana can help treat a number of conditions including: Alzheimer's disease Appetite loss Cancer Crohn's disease Diseases effecting the immune system like HIV/AIDS or Multiple Sclerosis (MS) Eating disorders such as anorexia Epilepsy Glaucoma Mental health conditions like schizophrenia and posttraumatic stress disorder (PTSD) Multiple sclerosis Muscle spasms Nausea Pain Seizures Wasting syndrome (cachexia) But it’s not yet proven to help many of these conditions, with a few exceptions, Bonn-Miller says. "The greatest amount of evidence for the therapeutic effects of cannabis relate to its ability to reduce chronic pain, nausea and vomiting due to chemotherapy, and spasticity [tight or stiff muscles] from MS," Bonn-Miller says. How does it help? Cannabinoids -- the active chemicals in medical marijuana -- are similar to chemicals the body makes that are involved in appetite, memory, movement, and pain. Limited research suggests cannabinoids might: Reduce anxiety Reduce inflammation and relieve pain Control nausea and vomiting caused by cancer chemotherapy Kill cancer cells and slow tumor growth Relax tight muscles in people with MS Stimulate appetite and improve weight gain in people with cancer and AIDS Can medical marijuana help with seizure disorders? Medical marijuana received a lot of attention a few years ago when parents said that a special form of the drug helped control seizures in their children. The FDA recently approved Epidiolex, which is made from CBD, as a therapy for people with very severe or hard-to-treat seizures. In studies, some people had a dramatic drop in seizures after taking this drug. Has the FDA approved medical marijuana? The cannabidiol Epidiolex was approved in 2018 for treating seizures associated with two rare and severe forms of epilepsy, Lennox-Gastaut syndrome and Dravet syndrome. In addition, the FDA has approved two man-made cannabinoid medicines -- dronabinol (Marinol, Syndros) and nabilone (Cesamet) -- to treat nausea and vomiting from chemotherapy. The cannabidiol Epidiolex was approved in 2018 for treating seizures associated with two rare and severe forms of epilepsy, Lennox-Gastaut syndrome and Dravet syndrome. How do you take it? To take medical marijuana, you can: Smoke it Inhale it through a device called a vaporizer that turns it into a mist Eat it -- for example, in a brownie or lollipop Apply it to your skin in a lotion, spray, oil, or cream Place a few drops of a liquid under your tongue How you take it is up to you. Each method works differently in your body. "If you smoke or vaporize cannabis, you feel the effects very quickly," Bonn-Miller says. "If you eat it, it takes significantly longer. It can take 1 to 2 hours to experience the effects from edible products."

#### The weed industry is growing, but needs investors to stay afloat – patents draw in investors and help companies expand

Roberts 20 [Chris Roberts, An award-winning investigative reporter and covered the legalization movement and the cannabis industry with a political economy lens for more than a decade. He launched northern California’s first cannabis-centric print vertical and founded San Francisco’s first dedicated drug-policy column. His work’s been featured in VICE, The Daily Beast, The Guardian, Deadspin, Observer, Curbed, Leafly News, High Times, SF Weekly, and many other places. He hold a master’s degree in politics from Columbia Journalism School, 5-28-2020, "Why Patent Cannabis? For Markets, Mostly.," Forbes, https://www.forbes.com/sites/chrisroberts/2020/05/28/why-patent-cannabis-for-markets-mostly/, 8-21-2021] //WHS MR

On May 20, Charlotte’s Web, the Colorado-based CBD giant and arguably one of the biggest names in legal cannabis, announced that the company was awarded its second federal patent on a cannabis plant. Unlike the company’s 2018 plant patent on a Farm Bill-compliant high-CBD hemp cultivar—which was the first hemp strain to receive federal intellectual property protection—US Patent No. 10,653,085 is a utility patent. This means, after satisfying a more rigorous process, including dropping off thousands of seeds at an official United States depository, Charlotte’s Web now claims as its intellectual property both the cultivar of hemp the company calls CW1AS1 as well as “methods” of plant production and cannabinoid extraction. Okay! But so what? Why patent a hemp strain—why patent two? What does it all mean? Does Charlotte’s Web now have legal claim to the entire CBD game?To the last question, no. And as for what this means, for normal people and cannabis consumers, very little. For patent attorneys or competitors of Charlotte’s Web in the CBD industry, it portends a little more, but just a little. At least for now, cannabis patents like this one aren’t really intended to defend intellectual property in court—which is where a patent has its most practical value. No, this patent is probably meant for the market. Patents like this exist mostly for companies to satisfy and woo investors, for whom a company’s ability to say “Look! I have a patent” might be the difference between signing a check, or not. And like all publicly traded cannabis companies, Charlotte’s Web has a lot of spooked and angry investors who need pleasing. Patents “generate interest in the company, and are something investors would look at,” said Jonathan Hyman, an attorney and partner at the Los Angeles office of Knobbe Martens. Whether Charlotte’s Web would enforce the patent, and how, “remains to be seen,” he added. Company officials were not available to discuss the matter. In a statement provided by Sylvia Tawse, the company’s director of communications, CEO Deanie Elsner said Charlotte’ Web “will continue to pursue patent protection for unique and novel hemp genetics developed by our horticulture division.” Whether that meant there are any pretenders the company plans to sue, she did not say. Though cannabis-related patent applications have been a thing since well before legalization and have tripled since 2015, as IP Watchdog noted, the mere phrase “cannabis patent” can still be triggering in cannabis circles. Patent talk can often lead to galaxy-brain thinking like the “Monsanto is supporting legalization in order to steal cannabis” or the “Philip Morris is buying up land in Humboldt County” conspiracy theories. In the case of Charlotte’s Web, the company’s already locked up what’s probably its most valuable asset: its name. Charlotte’s Web is named for Charlotte Figi, the sufferer of childhood epilepsy who enjoyed relief from her symptoms after taking an extract of high-CBD cannabis grown by the Stanley brothers (and who died earlier this month after contracting COVID-19). The world came to know Charlotte Figi and the Stanley brothers, seven photogenic Coloradans whose first names all begin with J, after they were prominently featured in a 2014 CNN special hosted by Sanjay Gupta. A very famous children’s book and a very famous and recognizable name, the company was sure lock down the name “Charlotte’s Web” with a trademark—one the company is currently defending in federal court, after a rival company dared market CBD products called Charlotte’s Web. That’s what patents are for in terms of the law. But markets are another matter—and it’s worth observing that the company went public after securing its first patent. Like almost all publicly traded companies in the cannabis sector, Charlotte’s Web is stuck in high-loss doldrums after hitting early peaks. For the past week, shares in Charlotte’s Web have been trading in the $7 to $9 range in the Toronto Stock Exchange. That’s a big gain from the $4.24 seen at the company’s mid-March nadir, but still far below last summer’s high-water mark of $28.21, set in August. Despite being sold in more than 11,000 stores, the company still lost $1.7 million in 2020—a hit smaller than other companies in the cannabis sector, but still in the red. Patenting hemp genetics and the processes to achieve them won’t be enough to rescue the rest of the company’s lost value. But if Charlotte’s Web wants to be a global CBD brand, with product in supermarkets and convenience stores all over the globe—and why wouldn’t it?—this means something. "Having this patent, that they can wave around and say, 'Hey, we've got coverage on it, and it's the best variety [of CBD rich hemp] that you're going to get,’ ” said Andrew Merickel, who holds a Phd in neuroscience and is also an attorney and partner at the San Francisco office of Knobbe Martens. “That’s pretty valuable.” How valuable? That’s all up to the logic of the market.

#### Cannabis is key to tech innovations in agriculture – only long-term solution for sustainability and security

Yamazaki 17 Kevin Yamazaki (founder and CEO of [Sidebench](http://sidebench.com/), a leading digital product and venture studio that creates custom software and apps), 3-27-2017, "High Tech: How Marijuana Legalization Breeds Innovation," Observer, https://observer.com/2017/03/high-tech-how-marijuana-legalization-breeds-innovation/, SJBE

With the competition blazing and increased legalization on the horizon, we can expect to see the weed market become a hotbed for tech innovations. Forecasts indicate that revenue in the U.S. from medical marijuana alone will reach at least [$10.8 billion by 2018](http://fortune.com/2016/02/01/marijuana-sales-legal/). When states expand to allow recreational use, this number will surely increase. As investors become more comfortable deploying capital around cannabis, tech will revolutionize the marijuana ecosystem for producers, distributors, and consumers alike. The future of marijuana innovation Innovation has begun to outpace legalization as tech organizations make groundbreaking strides in researching and developing applications for marijuana. For example, [Kalytera](https://kalytera.co/) is exploring how cannabidiol — a non-psychoactive cannabinoid with a number of potential medical applications — can be used to target diseases such as obesity and osteoporosis. The findings of such research could transform how people cope with chronic illness and pain. Companies are also experimenting with improvements in [weed-growing processes](http://www.ibtimes.com/legal-marijuana-cultivation-driving-technology-revolution-industrial-agriculture-1925167). Cannabis is a finicky crop, so the ability to fine-tune growing processes could generate products far superior to today’s. Several organizations are devising smart, energy-efficient systems that automatically adjust growing environments according to changes in moisture, temperature, and sunlight. Meanwhile, data-capture technologies enable growers to identify optimal conditions for their plants, leading to larger and better-quality yields. The primary speed bump for the industry at this point is that marijuana is still classified as a Schedule I drug and is illegal at the federal level. Even if this factor doesn’t inhibit marijuana-centric technology innovation directly, it certainly has a strong indirect effect, as many potential financiers (and entrepreneurs) are scared away by either fear of prosecution or skepticism about the industry’s stability. That said, as more states allow for medical marijuana or legalize the drug entirely, the potential market size for marijuana-centric products expands as well. Perhaps more importantly, with some form of state legalization becoming the norm rather than the exception, there is a degree of safety in numbers. Assuming we see the trend of legalization for medical and recreational uses continue, production will inevitably become an even bigger business. Technology will play an increasing role in ensuring quality, consistency, and efficiency on the production side. We’re already seeing startups like [Cannafuse](http://cannafuse.com/) and [Teewinoit Life Sciences](https://tlscorp.com/) focusing on providing a tech-enabled scientific approach to the mass scientific production and distribution of cannabis. Advances in the irrigation systems, efficiency lamps, and data tracking processes used to grow marijuana may have far-reaching effects beyond the cannabis industry. Industrial farmers could adopt these techniques to increase their outputs and reduce energy expenses, while building managers can use them to lower energy loads from their properties. On the consumer side, the medical marijuana industry, in particular, will likely see an explosion of on-demand delivery services. Consumers are accustomed to using their smartphones to book cars, buy groceries, and mail packages. Why wouldn’t they receive their medical marijuana that way, too? Expect to see personalized services as well — think apps that recommend strains of marijuana on the basis of your preferences. Apps such as [MassRoots](https://massroots.com/) bring the social media aspect to what is, for many people, a social product by connecting weed enthusiasts to one another through news updates and other types of content. Even Microsoft is throwing its hat into the ring with [marijuana tracking software](http://www.businessinsider.com/microsoft-marijuana-tracking-software-2016-11) that ensures growers comply with their tax obligations and prevents legally grown pot from ending up on the black market. As the cannabis industry expands, the opportunities for growth are diverse and extensive. Tech-enabled companies will inevitably spur that growth, driving breakthroughs in medicine, crop development, and customer experiences. The momentum created by legalization will transform a once-taboo drug into a mainstream commodity, and the tech world stands to benefit enormously.

#### Extinction – food insecurity causes conflict and goes nuclear

FDI 12 FDI Team, 25 May 2012, “Food and Water Insecurity: International Conflict Triggers & Potential Conflict Points,” Future Directions International, <https://www.futuredirections.org.au/publication/international-conflict-triggers-and-potential-conflict-points-resulting-from-food-and-water-insecurity/>, SJBE

There is little dispute that conflict can lead to food and water crises. This paper will consider parts of the world, however, where food and water insecurity can be the cause of conflict and, at worst, result in war. While dealing predominately with food and water issues, the paper also recognises the nexus that exists between food and water and energy security. There is a growing appreciation that the conflicts in the next century will most likely be fought over a lack of resources. Yet, in a sense, this is not new. Researchers point to the French and Russian revolutions as conflicts induced by a lack of food. More recently, Germany’s World War Two efforts are said to have been inspired, at least in part, by its perceived need to gain access to more food. Yet the general sense among those that attended FDI’s recent workshops, was that the scale of the problem in the future could be significantly greater as a result of population pressures, changing weather, urbanisation, migration, loss of arable land and other farm inputs, and increased affluence in the developing world. In his book, Small Farmers Secure Food, Lindsay Falvey, a participant in FDI’s March 2012 workshop on the issue of food and conflict, clearly expresses the problem and why countries across the globe are starting to take note. . He writes (p.36), “…if people are hungry, especially in cities, the state is not stable – riots, violence, breakdown of law and order and migration result.” “Hunger feeds anarchy.” This view is also shared by Julian Cribb, who in his book, The Coming Famine, writes that if “large regions of the world run short of food, land or water in the decades that lie ahead, then wholesale, bloody wars are liable to follow.” He continues: “An increasingly credible scenario for World War 3 is not so much a confrontation of super powers and their allies, as a festering, self-perpetuating chain of resource conflicts.” He also says: “The wars of the 21st Century are less likely to be global conflicts with sharply defined sides and huge armies, than a scrappy mass of failed states, rebellions, civil strife, insurgencies, terrorism and genocides, sparked by bloody competition over dwindling resources.” As another workshop participant put it, people do not go to war to kill; they go to war over resources, either to protect or to gain the resources for themselves. Another observed that hunger results in passivity not conflict. Conflict is over resources, not because people are going hungry. A study by the International Peace Research Institute indicates that where food security is an issue, it is more likely to result in some form of conflict. Darfur, Rwanda, Eritrea and the Balkans experienced such wars. Governments, especially in developed countries, are increasingly aware of this phenomenon. The UK Ministry of Defence, the CIA, the US Center for Strategic and International Studies and the Oslo Peace Research Institute, all identify famine as a potential trigger for conflicts and possibly even nuclear war.

# 3rd off

#### Counterplan Text: The member nations of the World Trade Organization ought to 1] reduce intellectual property protections for COVID-19 medicines except for dual-use biotechnologies and 2] offer a 3 year patent extension on dual use biotechnologies conditioned on accompanying countermeasures.

#### The counterplan incentivizes development into countermeasures and removes terrorist access to biotechnologies.

Million-Perez, H. (2016). Addressing duel-use technology in an age of bioterrorism: Patent extensions to inspire companies making duel use technology to create accompanying countermeasures. AIPLA Quarterly Journal, 44(3), 387-436. Rachael Million-Perez is an associate with Fitzpatrick, Cella, Harper & Scinto and a graduate of the George Washington University Law School. //sid

Although previous congressional proposals, Acts, and committees aimed to fund and incentivize countermeasures, each failed to target dual-use technology countermeasure development. This article proposes, therefore, that the USPTO offer a patent-term extension for patents directed to dual-use technology on the condition that the patent owner creates an accompanying countermeasure. This article argues for an extension of three years 251 for patent owners who meet this condition in addition to any patent-term adjustments afforded to the patent owner pursuant to Title 35 of the U.S. Code or legislative acts. A. Patent Extension for Dual-Use Technologies in Exchange for an Accompanying Countermeasure is an Appropriate and Realistic Incentive that Could Yield Significant Benefit The conditional patent-term extension proposed here provides an incentive that will: (1) reduce unbridled accessibility to dual-use technologies, (2) make countermeasure development an attractive and cost-effective business investment, and (3) take advantage of companies and individuals who currently specialize in the dual-use technology field, and who possess the necessary resources to create accompanying counter-measures. The conditional patent-term extension proposed here provides an incentive that will reduce unbridled accessibility to dual-use technologies. Although accessibility to dual-use technology is essentially ungovernable in the Internet age, providing a three-year patent-term extension to a dual-use technology will motivate companies to collaborate with the U.S. Government to identify and enjoin individuals infringing their patented dual-use technology. As a result, biohackers and terrorist organizations will have diminished access to these technologies. Dissimilar to previous and current countermeasure incentives, the conditional patent-term extension proposed here will make countermeasure development an attractive and cost-effective business investment, because it will be easily applicable, lower the financial risk of countermeasure development, and potentially lead to profits. Unlike previous incentives, a patent-term extension on a dual-use technology in exchange for creating a countermeasure to that technology presents a simple and easily-applicable business model. Private companies need not contort themselves to meet the demands of legislation, like Project BioShield. Rather, a patent-term extension on the dual-use technology will be granted when the company identifies a dual-use quality of one of its innovations and opts to develop a countermeasure to the dual use of that specific innovation. Upon successful development of a countermeasure, the USPTO will then extend the company's dual use technology patent. Because the company likely has already received approval of the dual-use technology, it need not worry about whether the extension is affected by the countermeasure's approval time. The simplicity of this proposed regime would attract companies and individuals frustrated with other complicated or inapplicable incentives. In addition, the length and specificity of this proposed extension renders it a strong incentive that will lower the financial risk of countermeasure investment. The length of patent-term extension incentive must be able to generate participation by virtually guaranteeing a return on the company's investment in countermeasure production. As discussed above, the risk of countermeasure development is incredibly high, and thus the promise that a company may recoup or even profit from developing a countermeasure will entice companies who had previously avoided countermeasure investment.253 For these reasons, this article proposes a three-year patent term extension. Recent studies showed an increase in domestic R&D investment and new pharmaceutical product development when the patent-term extension changed from seventeen years to twenty years in both the United States and Canada.254 A similar surge may occur for dual-use technology countermeasure investment under the proposed extension. Over the additional three years of the patent term, companies are likely to receive the benefit of extending their monopoly on a profitable dual-use technology such that the company will likely recoup countermeasure development costs and, potentially, profit. As a result, dual-use technology countermeasure production is likely to increase. Additionally, proponents of patent extension, like Dr. Josh Bloom, Director of Chemical and Pharmaceutical Sciences at the American Council on Science and Health, contend that three-year patent extensions are likely appropriate for patents related to the company's portfolio.255 Unlike previous and current countermeasure incentives, the extension proposed here would neither under- nor over-compensate companies. For example, the six-month to two-year extension- offered in S. 975 and S. 3-are too short in length to ensure both that small and large companies find the incentive desirable.25 6 A three-year extension, however, would further assure that any size company would recoup its investment. Furthermore, unlike a wild card patent extension, which would permit a company to extend the life of any blockbuster product and thus accrue arguably unwarranted financial gain, under this proposal a company can only extend the life of a narrowly defined dual-use technology. A dual-use technology may or may not be a blockbuster. The chances that a dual-use technology has blockbuster status, however, are slim, considering only around 30 percent of newly-introduced pharmaceutical drugs have profits that exceed average R&D costs.257 As a result, large companies do not have an unfair advantage, nor do small companies have an unfair disadvantage. Rather, if a dual-use technology is not a blockbuster, both smaller biotechnology companies, with less than $500 million in annual revenue, and large companies will need a patent extension lengthy enough to guarantee cost recoup.258 Therefore, unlike the previously proposed extensions, three-year extensions to a dual-use technology patent will afford companies a considerable, yet fair, return on their investment in countermeasure development. A conditional patent-term extension like the one proposed here will also leverage companies' expertise and resources. Because a countermeasure to a dual-use technology will likely require the same expertise and resources used to develop the dual-use technology, a company may avoid some R&D costs when it develops both. Furthermore, tapping into a company's foundation of expertise and resources may expedite production of countermeasures to dual-use technology. Unlike acquiring separate countermeasures via mergers or acquisitions, using this expertise and resources springboard for countermeasure 259 The Monsanto herbicide, Roundup@, and the Roundup Ready@ crops genetically modified to be resistant to Roundup illustrates when a patent owner could be taking advantage of her expertise and resources. In the 1970s, Monsanto created the Roundup herbicide farmers use today.260 By the mid-90's, Monsanto neared the expiration date on its patent of Roundup and faced the possibility of losing the production rights of the blockbuster.261Yet Monsanto was able to use genetic engineering to create Roundup-Ready crops resistant to Roundup in 1996.262 In particular, Monsanto was able to create these plants after working on its herbicide when one of its scientists accidentally discovered Roundup-resistant bacteria. 263 Exploiting this discovery, the company worked diligently to splice the 26 resistant gene into a working plant model. 4 Because these crops were resistant to Roundup, a farmer used the herbicide in the fields to eliminate unwanted foliage while not harming the main crop. 265 Notably, Monsanto did not make a countermeasure to its herbicide, but similar to Monsanto's ability to create two technologies from a single concept, companies producing dual-use technologies can exploit discoveries made in their pursuit of creating a dual-use technology to eventually create an accompanying countermeasure. In sum, unlike previous countermeasure incentives, the conditional patent-term extension proposed here provides an incentive that reduces terrorist or biohacker accessibility to dual-use technologies, makes countermeasure development an attractive investment, and takes advantage of companies' resources and expertise.

#### Vulnerabilities exposed by COVID have invigorated availability and interest in bioterror, but technical challenges remain as barriers to acquisition.

Koblentz and Kiesel 7/14 [Gregory D. Koblentz (Deputy Director of the Biodefense Graduate Program and Assistant Professor of Government and Politics in the Department of Public and International Affairs at George Mason University) and Stevie Kiesel (Biodefense PhD Student, Schar School of Policy and Government, George Mason University). “The COVID-19 Pandemic: Catalyst or Complication for Bioterrorism?”. Studies in Conflict & Terrorism. Published online 14 Jul 2021. Accessed 7/22/21. <https://www.tandfonline.com/doi/abs/10.1080/1057610X.2021.1944023?journalCode=uter20> //Xu]

Since COVID-19 was declared a pandemic in March 2020, there has been no major bioterrorist incident that challenges or validates the core beliefs of the optimists, pessimists, or pragmatists. Extremists with violent apocalyptic or accelerationist ideologies—chiefly jihadists and far-right extremists—have sought to capitalize on the pandemic, but they still rely on conventional weapons. Based on available open-source information, terrorist interest in weaponizing SARS-CoV-2 seems limited. While some individuals and groups who subscribe to violent apocalyptic or accelerationist ideologies have shown some interest in crudely spreading the virus, most terrorists have sought to exploit the conditions the pandemic created rather than the virus itself. An increase in the risk of bioterrorism cannot be completely discounted as the equipment, knowledge, and expertise to work with high-risk pathogens is increasingly available and there are a small number of groups with the ideologies and objectives consistent with the use of biological weapons. Still, important technical barriers to acquiring and using a biological weapon capable of causing mass casualties, even far below the effects of a pandemic pathogen, will remain even after the pandemic is contained. While COVID-19 graphically demonstrated the vulnerability of modern societies to infectious diseases, the lessons learned from this experience, if properly implemented, should significantly improve the capability of governments around the world to detect and respond to future pandemics as well as deliberate disease outbreaks. Counterterrorism and biodefense efforts should not be dictated by the latest “‘risk of the month’ policies crafted in the wake of visible or highly publicized events.”117 Instead, strategies for reducing the likelihood and consequences of bioterrorism in the wake of the COVID-19 pandemic should be based on a realistic appraisal of the risk and investments should be optimized to strengthen preparedness against the full spectrum of biological threats.

#### IP protections are the only limit on proliferating dual-use biotech – losing patents puts financial pressure on companies to outsource R&D, which skyrockets bioterror acquisition.

Finlay 10 [Brian Finlay (President and Chief Executive Officer of the Stimson Center, M.A. from the Norman Patterson School of International Affairs at Carleton University, a graduate diploma from the School of Advanced International Studies, the Johns Hopkins University and an honors B.A. from Western University in Canada). “The Bioterror Pipeline: Big Pharma, Patent Expirations, and New Challenges to Global Security”. The Fletcher Forum of World Affairs. Vol. 34, No. 2 (Summer 2010), pp. 51-64. <https://www.jstor.org/stable/45289504?seq=1#metadata_info_tab_contents> //Xu]

Until recently, these investment risks were frequently mitigated by income generated from past drug development successes. In most markets, that income was guaranteed by strict patent protections that closed the window to outside competition for a set period of time. More recently, however, the uncertainty of R&D investments has been complicated not only by the global economic downturn, but more importantly by looming patent expirations that will open many of big pharma's patent-protected drugs to generic competition. Between 2007 and 2012, more than three dozen drugs will lose patent protection, removing an estimated $67 billion from big pharma's annual sales.33 With existing drug development pipelines unable to fill the gaps, biopharmaceutical companies are under intense pressure not only to cut costs - which would provide only temporary relief to the bottom line - but also to rapidly replenish their development pipelines. Some industry analysts have described this "perfect storm" as an "existential" moment for big pharma.34 Many pharmaceutical companies have approached this challenge by accelerating and widening the outsourcing and off-shoring of both R&D and manufacturing, and by aggressively buying promising assets from small biotech companies through acquisitions and strategic alliances. Interestingly, these partnerships are less frequently linked with American or even Western-owned and-operated companies than in the past. Many pharmaceutical giants like Indiana-based Eli Lilly are turning to alliances with firms in Asia and elsewhere around the world, outsourcing key technical operations. Instead of functioning as fully integrated firms, big pharma companies have found value in networked relationships with independent small to large firms, universities, and non-profit biotechnology laboratories around the globe.35 The net result has accelerated technology proliferation - for both beneficial and nefarious uses - far beyond the traditional hubs for biotech innovation. Pharma's increasingly desperate search to seed and ultimately acquire innovative new biotechnologies means that foreign (non- Western) markets are pulling ahead in biotech innovation. Indeed, the quantity of biotech companies outside the United States has grown remarkably in recent years: in Israel, the number grew from 30 in 1990 to about 160 in 2000; in Brazil, from 76 in 1993 to 354 in 2001; and remarkably, in South Korea, from one in 2000 to 23 in 2003. 36 More generally, the Asia-Pacific region has emerged as one of the world s fastest-growing biotechnology hubs, with the growth of publicly traded companies handily outpacing growth in the United States and Europe over recent years.37 As fruitful partnerships lead big pharma to increasingly generate resources, technologies, and knowledge, these capacities spin off new competitor firms in a self-executing multiplier effect. With the number of facilities and highly trained individuals increasing, the likelihood of a serious biological accident or nefarious incident will similarly rise, which will be particularly risky when dual-use technologies are introduced into insufficiently regulated markets. CONCLUSIONs In statements, U.S. officials continue to cite several countries believed to have or to be pursuing a biological weapons capability.38 But globalization exports the challenge of bioproliferation far beyond these geographic boundaries and transcends multiple societal layers well beyond government actors. As a result, it is increasingly clear that states no longer have a monopoly on dual-use biological R&D. Recent evidence suggests a growing threat of terrorist acquisition of biological weapons. As technological advancement in the life sciences is progressively pushed into countries of the Global South, some of which are also potential hotbeds for terrorist activity, the nexus of science and terrorism becomes especially acute. While far from perfect, the current system of stringent controls levied by Western governments over the biopharmaceutical sector has proven remarkably effective, especially given the diffusion of technologies and the ease of their redirection for hostile purposes. As the biotech revolution continues to widen, however, advanced industrialized governments are increasingly playing catch-up with changing technological realities. As these technologies proliferate, security analysts have become uneasy with the lack of controls in many states. The dearth of legal controls, the lack of rigor in their enforcement, and the growth in private-actor involvement in dual-use activities has sobering implications for global security.

#### Bioterrorism causes Extinction – overcomes any conventional defense.

Walsh 19, Bryan. End Times: A Brief Guide to the End of the World. Hachette Books, 2019. (Future Correspondent for Axios, Editor of the Science and Technology Publication OneZero, Former Senior and International Editor at Time Magazine, BA from Princeton University)//Elmer

I’ve lived through disease outbreaks, and in the previous chapter I showed just how unprepared we are to face a widespread pandemic of flu or another new pathogen like SARS. But a deliberate outbreak caused by an engineered pathogen would be far worse. We would face the same agonizing decisions that must be made during a natural pandemic: whether to ban travel from affected regions, how to keep overburdened hospitals working as the rolls of the sick grew, how to accelerate the development and distribution of vaccines and drugs. To that dire list add the terror that would spread once it became clear that the death and disease in our midst was not the random work of nature, but a deliberate act of malice. We’re scared of disease outbreaks and we’re scared of terrorism—put them together and you have a formula for chaos. As deadly and as disruptive as a conventional bioterror incident would be, an attack that employed existing pathogens could only spread so far, limited by the same laws of evolution that circumscribe natural disease outbreaks. But a virus engineered in a lab to break those laws could spread faster and kill quicker than anything that would emerge out of nature. It can be designed to evade medical countermeasures, frustrating doctors’ attempts to diagnose cases and treat patients. If health officials manage to stamp out the outbreak, it could be reintroduced into the public again and again. It could, with the right mix of genetic traits, even wipe us off the planet, making engineered viruses a genuine existential threat. And such an attack may not even be that difficult to carry out. Thanks to advances in biotechnology that have rapidly reduced the skill level and funding needed to perform gene editing and engineering, what might have once required the work of an army of virologists employed by a nation-state could soon be done by a handful of talented and trained individuals. Or maybe just one. When Melinda Gates was asked at the South by Southwest conference in 2018 to identify what she saw as the biggest threat facing the world over the next decade, she didn’t hesitate: “A bioterrorism event. Definitely.”2 She’s far from alone. In 2016, President Obama’s director of national intelligence James Clapper identified CRISPR as a “weapon of mass destruction,” a category usually reserved for known nightmares like nuclear bombs and chemical weapons. A 2018 report from the National Academies of Sciences concluded that biotechnology had rewritten what was possible in creating new weapons, while also increasing the range of people capable of carrying out such attacks.3 That’s a fatal combination, one that plausibly threatens the future of humanity like nothing else. “The existential threat that would be most available for someone, if they felt like doing something, would be a bioweapon,” said Eric Klien, founder of the Lifeboat Foundation, a nonprofit dedicated to helping humanity survive existential risks. “It would not be hard for a small group of people, maybe even just two or three people, to kill a hundred million people using a bioweapon. There are probably a million people currently on the planet who would have the technical knowledge to pull this off. It’s actually surprising that it hasn’t happened yet.”