HEARING NOTICE: From the Science Lab to the Medicine Cabinet: How China is Cornering the Market on Our Medicines

The House Select Committee on China will hold a hearing titled **From the Science Lab to the Medicine Cabinet: How China is Cornering the Market on Our Medicines.** The hearing will be held on **Wednesday, March 18 at 10:00 A.M.** in **390 Cannon House Office Building.**

The witnesses for the hearing will be:

- **Mr. Patrick Cashman**, President, USAntibiotics
- **Mr. Francisco Gimenez**, Partner, 8VC
- **Dr. Marta E. Wosińska**, Senior Fellow – Economic Studies, Center on Health Policy at Brookings

Written Testimony

The Coming Crisis in US Biopharma Research

Thank you Chainman Moolenaar, Ranking Member Khanna and to the other members of the Committee for bringing us all here together to speak on this critical topic.

I am Dr. Francisco Gimenez, a partner at 8VC leading our life sciences investment practice. My work focuses on creating and investing in companies to improve human healthcare. I am here in my capacity as an investor to speak about the emergence of China in the world biotech ecosystem, and the implications this will have on the USA.

While I am an investor in, and board member of, many biotechs; I am *not* the most qualified voice on this matter. My firm does not do direct work with the Chinese biotech industry, meaning I do not have direct experience operating within their ecosystem. Unfortunately, those that do have direct experience are understandably not willing to testify here and risk their business. That said, I am quite familiar with the Chinese biotech genesis and its effects on the current state of the industry.

My core thesis is that China has disrupted the US biotech industry, and we need to institute bold change to retain and grow our leadership for the next decade. This comes from a confluence of factors: deep strategic policy executed by China, a conservative status quo from the USA, and macro financial events that accelerated this collision. This is not merely a competitive challenge; it poses an **existential threat** to the US biotech system which will have large negative ramifications within the next decade.

US Biotech is the Crown Jewel American Innovation

The modern US Biotech industry emerged from the founding of Genentech on April 7, 1976. In a couple of weeks, we will mark the 50th anniversary of this event and the subsequent era of American exceptionalism in biopharma. Beyond biotech, it represents one of the most incredible innovation engines in human history underscored by the interplay of government funded research, an entrepreneurial culture, and a sophisticated financial system that incentivizes innovation. To understand the biopharmaceutical industry is to recognize it as a foundational pillar of American economic sovereignty and public health infrastructure.

The sheer economic gravity of this sector is staggering. In 2023, the U.S. bioscience industry generated more than $3.2 trillion in total economic output. Its operations contributed ~$1.7 trillion in value-added economic activity, which accounts for an astounding ~7% of the entire U.S. private sector Gross Domestic Product (GDP). The industry directly employs approximately 2.3 million Americans across nearly 150,000 business establishments, ensuring a presence in every single state. Furthermore, the industry acts as a massive force multiplier for local economies; every single direct biopharmaceutical job supports approximately 3.69 jobs in the broader economy, resulting in a total employment footprint of nearly 10 million American jobs.

These are high-quality, family-sustaining careers; the average bioscience worker earns over $132,000 annually, which is 83% higher than the national private-sector average. This economic engine also generated approximately $216 billion in federal tax revenue in 2023 alone, providing critical funding for the nation.

However, the true enormity of what is at stake goes far beyond balance sheets; it is measured in the health, longevity, and productivity of the American people. The positive externalities of biopharmaceutical innovation are profound. Between 1990 and 2015, U.S. life expectancy increased by about 3.3 years, and pharmaceutical innovation was responsible for a third of that entire societal gain. These biomedical breakthroughs have drastically reduced mortality rates, driving a 75%+ improvement in HIV mortality, a ~60% improvement for breast cancer, and a 50%+ improvement for heart disease. Economists estimate that the cumulative gains in life expectancy during the late 20th century added approximately $3.2 trillion per year to our national wealth. Furthermore, the process of drug genericization is the only consistently deflationary aspect of US healthcare.

Healthier citizens are also more productive workers. Drug innovations introduced between 2000 and 2015 yield approximately 5 million additional work days each year, adding an inflation-adjusted approximately $300 billion in annual wage gains to the U.S. economy. By curing and managing chronic conditions, these innovations drastically reduce the burden on our healthcare system, saving billions of dollars annually by preventing expensive, avoidable hospitalizations and reducing reliance on long-term care facilities.

The U.S. biotechnology ecosystem is a unique strategic asset, unparalleled in its dual delivery of immense economic wealth and life-saving public health benefits. If we allow this crown jewel to be hollowed out by foreign adversaries, we risk surrendering not only millions of high-paying jobs and trillions in GDP, but the very health, survival, and productivity of the American public.

China Biopharma is Now a Dominant Global Player

While the United States enjoyed being the undisputed architect of pharmaceutical innovation, China served primarily as a low-cost manufacturer of generic drugs and basic active ingredients. Today, that paradigm has been entirely dismantled. In less than a decade, China has transitioned from a fast follower into a global frontrunner, producing cutting-edge therapies that are capturing immense global market share.

The sheer velocity of this transformation is unprecedented. In 2015, China's share of the global pipeline for innovative drugs was a mere ~3%. By 2024, that share had exploded to roughly 30%. Similarly, between 2015 and 2019, novel molecules originating from China accounted for just ~7% of innovative drug launches worldwide; between 2020 and 2024, that figure surged to roughly 40%. In 2025 alone, approximately 50% of all novel medicines licensed by global pharmaceutical companies originated in China, a staggering leap from nearly zero in 2020.

China’s dominance is highly visible in clinical trials, the critical human testing phases required to prove a new drug is safe and effective. China overtook the United States in total clinical trial volume in 2021 and has widened its lead every year since. In 2025, China conducted approximately 7,700 clinical trials compared to roughly 6,200 in the U.S.. In oncology China now hosts approximately 40% of all global clinical trials, up from just 10% a decade ago.

Western pharmaceutical giants are now heavily reliant on Chinese laboratories to stock their own pipelines. This is evidenced by a massive explosion in "out-licensing" agreements, wherein a Chinese company sells the rights to develop and commercialize its drug to a foreign multinational corporation. The value of these cross-border out-licensing deals skyrocketed nearly tenfold, from ~$13.9 billion in 2021 to a record-breaking ~$137.7 billion in 2025. By the first half of 2025, China captured approximately ~32% of all worldwide out-licensing deal value. Furthermore, Chinese biopharmaceutical firms accounted for five of the ten largest global R&D licensing deals in 2025, signaling that global companies are increasingly buying entire Chinese platforms to secure their own long-term survival.

Chinese companies are no longer just selling their early-stage discoveries to the West; they are becoming formidable commercial entities generating billions in revenue. Last year Zhu Yi, chairman of Chinese pharma company Sichuan Biokin Pharmaceutical, stated “*Partnering with a multinational [pharmaceutical company] lets us learn first-hand how global operations work. It’s like having a personal tutor showing you, day by day, how to build a global business….we mirrored that and learnt by doing. But we have also seen the weaknesses of Big Pharma, the bureaucracy and inefficiency, which has helped us avoid detours as we grow.*” As an illustrative example, the Chinese biotech firm BeiGene (now known as BeOne) generated ~$5.4 billion in revenue in 2025. Its flagship blood cancer drug, Brukinsa, generated over ~$4 billion in global sales in 2025 as a single product. Crucially, Brukinsa captured the number one share of new patients in the highly competitive U.S. market, proving that Chinese-developed therapies can win on clinical merit on the global stage.

The Chinese biotechnology market as a whole is projected to reach ~$263 billion by 2030, cementing its position as a structural, globally dominant force in modern medicine.

The Existential Threat: Why We Must Care

On its face, China’s ability to design and test experimental therapies is a net positive for patients globally. More therapies designed and tested more quickly for less money will accelerate medical discoveries. To that end, I want to stress that I do not want to shut the door on this innovation. My perspective is simply that this has the possibility of hollowing out our US R&D engine that will cause similar long-term issues that we experienced in our manufacturing sector, electric vehicles, and rare-earth metal refining.

Without US early stage biotech dollars, phase 1 and phase 2 US trial sites will move abroad leading to the loss of our leading medical centers. The MD Anderson, Memorial Sloan Kettering and Mayo clinics of the world depend on having the world leading clinicians and clinical trials to

attract scores of patients. Once those trials leave, so do the top trialists and with them the global patient base these institutions rely on to stay solvent. If these top academic clinical centers fail, or downsize, it's not just high paying doctor jobs that are lost. Phlebotomists, nurses, physician assistants, pharmacists, techs and the whole host of indirect economic stimulation is lost too. This will have a cascading effect on even the phase 3 trials. Phase 3 trial costs will skyrocket as the workforce that would have been trained at leading medical centers atrophies. This cycle will The consequences of this loss extend far beyond abstract returns to shareholders:

Economic Atrophy: The US biotech engine is a major driver of our economy, creating high-paying jobs, advanced infrastructure, and significant capital. Outsourcing this capability means the US stands to lose a major economic sector, akin to the devastating shift in manufacturing in the 1970s. There are many major job engines in local economies that survive only due to the presence of the biotech industry in America: hospitals with clinical trials sites, glass companies (such as Corning) that produce laboratory equipment and many more secondary and tertiary suppliers of this major industry.

A Shift in Healthcare Priorities: America owns the Global Center of Biotech Research because the US pays to discover and then purchase the overwhelming majority of drug costs. This ensures that research is focused on solving **American healthcare problems first.** Moving this capability to China means research priorities will shift to Chinese or global problems, reducing our leverage and potentially denying Americans drugs focused on our specific needs. In an alternative world without an American centric bioscience field, we might have never had access to the fantastic weightloss drugs such as Ozempic / the GLP-1s.

Biosecurity Compromise (A Dual-Use Sector): The US biotech sector is a crucial dual-use public/private institution for rapid response to biosecurity threats as demonstrated by the rapid development of COVID-19 countermeasures. Outsourcing this fundamental capability means that Americans, and American service members will suffer if an adversary decides to take advantage of a lack of our capability to respond. Imagine a world where instead of home-grown American countermeasures we have to rely on whatever China might, or might not, offer us for a pandemic. Unchecked diseases have the power to make, or break, empires across history from the 1918 flu that devastated German war fighting capabilities or the many plagues that eventually broke the Roman empire. If we want to safeguard an American 21st century, we must be able to safeguard the American people against future diseases whether zoonotic, lab-leaks or engineered.

How Did We Arrive Here?

Understanding the American Biotech Engine

Much like biology, the lifecycle of a therapeutic drug follows its own *central dogma*. Government funded academic medical research flows into biotechs who ingest venture capital funding to turn academic discoveries into potential drugs. The biotechs then engage in industrial scale research

and clinical trials before partnering or selling to a pharmaceutical company, returning capital to employees, investors, and academic institutions. Pharma companies have a temporary monopoly on an approved drug that allows them to sell with meaningful profits that they reinvest into R&D and M&A. When the life of a patent runs out, the drug will be genericized and the pharma typically sunset selling that drug as generics manufacturers take over.

Academic Medical Research: The US NIH funds the overwhelming majority of novel first in class biological research generating biological insights into disease and how to correct that disease. This research has, as of the last 50 years, been the world leader in discovering these sorts of novel biology. Academics typically lack the scale, funding and rigor of biotechs & pharmas at translating their innovations into approved drugs and so typically turn to outlicensing their novel IP into startups spun off of their lab or directly into pharmas. Academics incentives are primarily to publish novel insights and win acclaim from their peers and secondarily the long term flow of royalties back into the university from successful drugs.

Pharmaceutical Companies (Pharma): These are the large-scale entities that operate across R&D, clinical development, manufacturing, and distribution. Their entire revenue model is built on **temporary patent monopolies**, which is what drives investment in risky, long-term R&D. When these patents expire (a phenomenon known as **genericization**), prices drop significantly, democratizing access globally. The pharmaceutical industry is arguably the only deflationary part of healthcare although AI may help in the future. Today, Pharma faces a major **Patent Cliff**, projected to drop revenues by $200-$300 billion by 2030, meaning they are desperately seeking ways to refill their pipelines through licensing and M&A.

Biotech Companies: These are the early-stage R&D firms. Due to the long 10-15 year development timeline, they are generally focused on achieving clinical "proof of concept" before exiting to Pharma via M&A. They are the engine of innovation.

Venture Capital (VC) Investors: VC incubates and funds the biotech companies, taking on the earliest and riskiest stages of R&D. Our returns are generated almost exclusively through the M&A exits to Pharma.

FDA: The FDA serves as the umpire calling balls and strikes on drugs. It regulates nearly every part of the drug discovery and licensing process either directly or indirectly (by setting the downstream requirements that drugs must pass). Academics, Pharma, Biotech Companies and VCs all orient themselves around what the FDA declares is needed to get a drug into humans and later to get a drug approved for commercial sales.

One of the amazing parts about this system is that there is no centralized coordination mechanism. This is an interplay of the public and private sector that is orchestrated with strong, reproducible financial incentives. We have developed a self-perpetuating engine of biotech innovation.

That said, this process is extraordinarily costly, time-intensive, and laborious. The average time for a molecule from conception through approval is roughly **15 years**. When you incorporate the

low success rate of **~10%,** the fully-loaded cost of each successful drug is somewhere between **$1 and $3 billion**. To put it plainly: making a new drug is equivalent to building a skyscraper in Manhattan, where 90% of those skyscrapers explode at some stage of construction.

Structural Weaknesses in the US Biotech System

Self-Imposed Regulatory Bottlenecks: Before a new medicine can be tested in humans for the first time—a stage known as a Phase 1 clinical trial—the FDA requires an Investigational New Drug (IND) application. Currently, this burdensome process mandates exhaustive and often duplicative animal toxicology testing, adding massive costs and 12 to 18 months of delay to early research. In contrast, countries like China and Australia utilize streamlined notification pathways that allow clinical trials to safely launch in a fraction of the time and for up to 60% less cost. Because of these self-imposed bureaucratic bottlenecks, American companies are increasingly forced to offshore the testing of compounds discovered on U.S. soil just to survive the regulatory process.

The Domestic Capital Squeeze: Early-stage American biotechs are facing a severe domestic capital squeeze. The biotechnology sector relies heavily on venture capital to fund the long, high-risk journey from the laboratory to the clinic. However, a brutal combination of high inflation and elevated interest rates has led to a major slowdown in capital deployment over the past two years. Compounding these macroeconomic headwinds, the passage of the Inflation Reduction Act (IRA) and the introduction of government drug-pricing negotiations have injected profound commercial uncertainty into the U.S. market, chilling early-stage investment. Starved of domestic funding, agile American startups are being forced to either halt their research entirely or offshore their laboratory and manufacturing operations to cheaper Chinese Contract Research Organizations (CROs).

The Patent Cliff Desperation: Finally, established Western pharmaceutical giants are staring down a historic financial threat known as the "patent cliff". By 2030, the expiration of exclusive patent rights for many of the industry's most profitable, franchise-defining medicines is projected to wipe out over $200 billion in annual global revenue. Desperate to refill their drug development pipelines to survive this revenue collapse, these companies are slashing internal Research & Development (R&D) budgets and looking abroad. They are financially compelled to aggressively acquire and license cheap, clinically validated assets from Chinese laboratories. Ultimately, this means the U.S. is not merely losing out on innovation; our largest companies are actively forced to offshore their investments, serving as the financial lifeblood for China's biotech ascendancy.

China’s Decadal Biotech Strategy and Execution

The Top-Down State Mandate: Siphoning Western Talent to Fuel Domestic Ambitions

Since 2015, the Chinese Communist Party has executed a highly coordinated, state-sponsored industrial policy to dominate biotechnology, explicitly mandated by national initiatives like "Made in China 2025" and the "14th Five-Year Plan for Bioeconomy Development". As a foundational step, China utilized the "Sea Turtle" policy—exporting top life sciences students to the United

States for training, often subsidized by U.S. National Institutes of Health (NIH) taxpayer grants, and heavily incentivizing them to return home. These returning scientists bring back state-of-the-art knowledge, technical expertise, and an intimate understanding of the American system to fuel China's domestic ambitions.

State-Sponsored Dominance: Subsidizing the Global Research Infrastructure

To capture the global market, the Chinese government has poured massive state and local subsidies into its Contract Research Organizations (CROs)—the outsourced laboratories and manufacturing facilities that perform the heavy lifting of drug discovery and testing. By artificially lowering costs, China created major economic incentives for Western biotech and pharmaceutical companies to offshore a huge portion of their labor and research. Rational American actors, driven by fiduciary duty and the need to reduce costs, eagerly utilized this subsidized global research infrastructure, tying their development pipelines directly to China.

From Copycats to Cutting-Edge: Exploiting U.S. Vulnerabilities to Dominate Next-Generation Innovation

Historically, China focused on engineering around U.S. patents to create "me-too" drugs or cheap clones. However, they have rapidly transitioned to developing "first-in-class" and "best-in-class" therapies, now dominating highly complex, next-generation medicines like Antibody-Drug Conjugates (ADCs) and bispecific antibodies. They achieved this by exploiting U.S. vulnerabilities. The U.S. utilizes a "first-to-file" patent system, which forces American startups to quickly and publicly reveal their drug's "composition of matter"—the exact chemical blueprint of the medicine. Because U.S. companies simultaneously use Chinese CROs for their research, Chinese competitors possess both the public blueprints and the inside laboratory knowledge required to rapidly engineer their own superior versions of American drugs.

An Unlevel Playing Field: Weaponizing Ethical Loopholes and Military Facilities for Unmatched Speed

China has created an environment where they can generate human clinical data 2 to 5 times faster, and 30-50% cheaper, than the United States. They achieve this unmatched speed by weaponizing a system devoid of Western ethical and regulatory constraints. Western pharmaceutical companies frequently run clinical trials in Chinese People's Liberation Army (PLA) military hospitals and regions like the Xinjiang Uyghur Autonomous Region, where credible informed patient consent is practically non-existent. While the U.S. FDA stringently regulates domestic trials, it implicitly encourages this offshoring by accepting Chinese data for review while conducting fewer than 1% of the Good Clinical Practice (GCP) inspections in China that it performs domestically.

The Ultimate End Game: Applying the "Rare Earth" Playbook for Total Supply Chain Control

The culmination of this strategy is not merely to serve as a cheap laboratory for the West, but to achieve total vertical integration and global dominance, mirroring the playbook China used to

control rare earth elements. Currently, Chinese biotechs discover drugs and license them to Western pharmaceutical companies for global sales. But Chinese executives are openly stating their ambition to become fully integrated global multinational corporations, effectively cutting out U.S. pharma. Zhu Yi, chairman of Sichuan Biokin Pharmaceutical, recently noted that partnering with Western pharma is simply a way to learn how to build a global business, stating his firm is already building an overseas commercial team to launch drugs independently by 2028. If this trajectory continues, Chinese state-backed companies will control the entire pipeline from discovery to commercialization, leaving American patients entirely dependent on China for life-saving medicines.

The Culmination of These Factors

Pharma, being a rational actor, could not ignore this incredible value proposition. Up until 2023, almost no US pharma M&A was from Chinese biotechs. In 2024, approximately 30% of licensing deals were from China; last year, it was closer to half. The canary in the coal mine is clear: US VC dollars, frequently from US LPs, are now being recycled into Chinese biotech companies, which license into pharma that sells into the US healthcare system. **We are effectively exporting American capital and innovation outside our own ecosystem while using American NIH taxpayer dollars to train the very same Chinese scientists that turn around and create new drugs that we further pay for with American taxpayer dollars through health insurance.**

A Mandate for American Excellence

The solution requires a dual-pronged approach: accelerating US biotech and blocking unethical and unfair Chinese business practices. I am a strong proponent of US accelerationism. We should take advantage of this crisis to institute changes to dramatically improve our innovation sector.

Dramatically Reduce Overhead for Clinical Data in the U.S. We must reduce the time and cost it takes to launch clinical trials and gather human data. To do this, I urge Congress and the FDA to look to the Australian system, specifically the Clinical Trial Notification (CTN) pathway. Navigating a U.S. Investigational New Drug (IND) application is an agonizingly slow process because the FDA requires hundreds of pages of often duplicative pre-clinical animal toxicology data just to begin early-stage human testing. By contrast, the CTN pathway safely delegates initial safety reviews to local ethics committees and treating doctors, resulting in timelines that are 6 to 12 months faster than in the U.S.. The FDA already has the authority to initiate a pilot version of an Australian-style CTN pathway today; they must do so immediately, and Congress should codify this in the next PDUFA renewal.

Maintain Highest Standards for Drug Approval and Regulatory Review Our ultimate strength is that an FDA approval is the global gold standard. We must maintain this gravitas, but the industry needs clear, unchanging guidelines to meet that challenge—because capital flees uncertainty. We must also level the playing field to ensure foreign competitors are not exploiting

lower ethical or quality standards to undercut American companies. I commend the May 2025 Executive Order directing the FDA to ensure overseas manufacturers are held to the exact same standards as U.S. facilities. We must now extend this same logic to clinical data. I specifically recommend that the FDA bar clinical data generated in Chinese People's Liberation Army (PLA) hospitals, or any facility where credible, in-person verification of informed consent cannot be guaranteed.

Reform NIH Grant Policies and Immigration We must put an immediate stop to the "Sea Turtle" pipeline that is hemorrhaging our taxpayer-funded intellectual capital. We should create a streamlined immigration path for top global talent, but attach a firm condition: anyone receiving NIH grants or subsidies for their training must stay in America and work for American companies, or they must reimburse the U.S. taxpayer with interest. This is not a novel concept; Singapore's A-Star program successfully utilizes this exact model, proving that taxpayer-funded training can be contractually tied to domestic economic output without stifling academic freedom.

Modernize FDA Infrastructure with Advanced IT and AI. The FDA is currently overwhelmed by the sheer volume and increasing complexity of new drug applications flooding into the agency. To speed up regulatory reviews without compromising patient safety, Congress must make the development of advanced information technology and artificial intelligence (AI) a top priority for the FDA. Currently, there is a massive opportunity to employ AI to mine existing drug data and extrapolate known safety information to newly discovered molecules, which could drastically reduce the need for slow, repetitive animal testing. While the FDA took positive steps in January 2025 by proposing a framework to validate AI models used in drug submissions, and leadership has signaled a desire to shift toward these innovative computational technologies, the agency lacks the robust infrastructure to execute this at scale. Implementing these modernized review systems requires targeted investments to build advanced IT tools and hire specialized scientific staff who possess expertise in these novel domains. Especially in light of potential deep workforce cuts facing the FDA, Congress must provide dedicated funding to ensure the agency's technical capabilities are upgraded so they can review American medical breakthroughs at the speed of modern science.

Set an Ambitious Moonshot Goal. Finally, we must aim higher than merely keeping pace with China. Our national goal should be to shepherd a drug from molecular conception to final approval in under five years. This sub-5-year target is not just an arbitrary number; it perfectly aligns biotech development with standard 10-year venture capital fund cycles. Achieving this would fundamentally transform biotech financing, opening the life sciences to broader pools of private capital that invest based on financial fundamentals, rather than just scientific promise. Most importantly, it transforms hope into reality for American patients waiting for lifesaving treatments rather than letting them die while therapies languish in regulatory purgatory.

The time for complacency is over. We must protect the engine of American medical innovation, not just for economic security, but for our biosecurity and for the health of our future generations.