STANDARD BOTS

# Testimony of Evan Beard

Before the U.S. Congress, House Committee on Science, Space, and Technology,
Subcommittee on Research and Technology

"Robots Made in America:
Advancing U.S. Leadership in Manufacturing and Automation"

**April 21, 2026**

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# Introduction

Chairman Obernolte, Ranking Member Stevens, Chairman Babin, Ranking Member Lofgren, and Members of the Subcommittee, thank you for the opportunity to speak today.

My name is Evan Beard, and I'm the Co-Founder, CEO, and Chief Engineer of Standard Bots, America's largest industrial robot manufacturer. At Standard Bots, we make robots accessible and affordable so that every American manufacturer can put them to good use. Our AI-native robots require no code to program and take on tasks that legacy robots can't handle, allowing every worker to be a builder and operator of robots. We believe AI-native robots are the essential power tool of the 21st century – the tool that will grow American manufacturing and help every worker to be a force at work.

Before I talk about robots, I want to tell you why I care. For four decades, America has shed manufacturing jobs and hollowed out its middle class. We've gone from nearly 20 million manufacturing workers in 1979 to about 13 million today. While manufacturing alone is a formidable part of GDP, once you count the suppliers and the services that only exist because something is being built, the real footprint is even bigger – roughly a third of the U.S. economy and a third of American jobs. For every manufacturing worker, another five jobs are supported elsewhere in the economy — one of the largest sectoral multipliers. That's why this isn't just a factory-worker problem. When manufacturing weakens, wages fall across whole regions, upward mobility narrows, and millions of Americans — most of whom will never set foot in a factory — end up poorer and with fewer options. A strong manufacturing base isn't nostalgia. It's how millions and millions of people in this country build a good life.

For our part, we've deployed industrial robots to hundreds of American companies in nearly every state – from generational small businesses in the heartland to some of the country's largest manufacturers in oil and gas, automotive, aerospace, and data centers. What they all share is this: they become more competitive when they put robots to work. And competitiveness is the key that unlocks company growth, job growth, and wage growth. American manufacturers that don't adopt this transformative technology will shrink, cut jobs, or close altogether.[1]

But Chairmen, Ranking Members, and all the members here — we find ourselves in a dire position today. The United States is no longer competitive in manufacturing, and we're falling further behind every day. Any company that builds hardware can tell you that if you source from China instead of making it here, it's generally 5 to 10 times cheaper. And it's not just because of lower labor costs — it's because of its national investment in robotics. In 2024, China installed nearly nine times the number of robots we did. The overwhelming majority of industrial robots in the world operate outside the United States, and the ones we do use were built somewhere

[1] The research on this is clear. A study by the University of Minnesota tracked thousands of U.S. manufacturers from 2010 to 2022 – comparing those that adopted robots against those that did not. The firms that adopted robots grew jobs by 15% more and posted 150% more job openings than the firms that did not. The robots made them more competitive, and that competitiveness created the demand for jobs.
Adrianto, Avner Ben-Ner, and Ainhoa Urtasun, "Robots and Work," June 2024.
https://carlsonschool.umn.edu/sites/carlsonschool.umn.edu/files/2024-12/Job%20market%20paper-Adrianto.pdf

else. This is an essential technology for economic resilience, national security, and self-determination — and we've handed it to our competitors.

And who are the two largest funders of China's robotics industry? The Chinese government — and the United States. By offshoring our manufacturing, we're paying to build out its robotics industrial base. American manufacturing is a slow-moving train wreck, on the wrong side of the new industrial revolution.

This isn't just economics — it's national security. Chinese-made robots could carry backdoors at the firmware level, capable of remotely shutting down American factories. AI-enabled cameras inside our facilities see everything we build.

But it doesn’t need to be this way. We can alter the trajectory of our country. AI and robotics are changing everything right now, and it’s possible at this moment for the United States to become the worldwide leader in these transformative technologies. But not without public-private partnership and the right policies in place.

We need a National Robotics Strategy. China, Japan, Korea, Germany, and other countries leading the world in manufacturing have had one for decades. To get in the game, we need to act fast, act big, and act now. Why government intervention? Because other governments have already distorted the free market. When your competitor is state-subsidized, laissez-faire isn't a level playing field — it's unilateral disarmament.[2]

I'm encouraged that this Committee has already begun this work. We strongly support the bipartisan National Commission on Robotics Act, introduced by Chairman Obernolte with Representatives McClellan and Latta. Our written testimony outlines proposals we have collected from U.S. manufacturers that I hope will help inform this commission’s work.

In closing, I’d like to bring this back to my own family. I have five children, eight and under. When I talk about bringing manufacturing back, some people still picture the 1950s — dull, dirty, and dangerous. Those aren’t jobs we want for our kids. But I know we can make manufacturing jobs that I'd be proud to see my kids hold — as skilled Americans with high wages using AI-native robots to build what this country cannot afford to let others dominate: semiconductors, medicines, defense systems, energy infrastructure, and so much more. Millions of new jobs. And America, once again, as the most competitive place on Earth to build things.

Based on a decade building Standard Bots into America’s largest industrial robot manufacturer, this testimony outlines a practical four-part plan:

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[2] The U.S. *invented* this industry — and gave it all away. We led the world in consumer robots — iRobot recently filed for bankruptcy and was acquired by its Chinese manufacturer. We invented strain wave gearing, the fundamental gear technology inside nearly every robot arm on Earth — now owned and manufactured by a Japanese company. Every major American robotics company from the 1980s — Unimation, Adept, Cincinnati Milacron — is gone. All acquired by foreign companies or bankrupt.

1. **Build American robots, and put them to work in American factories**
2. **Establish a Center of Robotics and Manufacturing Excellence in every state**
3. **Build America's next-generation manufacturing workforce**
4. **Defend American manufacturing from foreign market manipulation**

Each of these pillars is explained below. America has the talent, ingenuity, grit, and drive to lead the world in making things again. But every month we wait, our manufacturing base slips further behind. I urge this Committee to enact legislation that secures our leadership in the next generation of AI and robotics.

## Pillar 1: Build American robots, and put them to work in American factories

**Summary**

Congress and the executive branch should treat robotics the way they have recently treated nuclear — with dedicated authorizing legislation and executive action that together accelerate deployment, unlock federal financing, and speed adoption. The ADVANCE Act and the 2025 executive orders on nuclear are moving an entire industry forward. Robotics needs the same combination.

Private capital alone cannot close the gap. Chinese suppliers of the critical components that power modern robots – motors, strain wave and planetary gear units, encoders, and motor controllers – are rumored to operate at 4% margins. No American investor funds a hardware components business at those returns. China has priced U.S. competitors out of the capital formation needed to compete. The market cannot solve this. Federal action is required.

Congress should apply a coordinated mix of tax incentives, grants, subsidies, and low-cost loans and loan guarantees to (1) build a domestic supply chain for robotics and its critical components, (2) make it affordable for American manufacturers to adopt advanced equipment, including robotics, and (3) direct that demand toward American-made systems through purchase tax credits, accelerated depreciation, and procurement preferences.

**The Problem**

America's dependence on foreign suppliers leaves us vulnerable to supply chain shocks, trade coercion, and national security risks, and it makes our industrial base structurally uncompetitive. Motors, strain wave and planetary gear units, encoders, and motor controllers are the foundational components of every modern robot – and today the overwhelming majority are imported, and most come from a single strategic competitor.

When foundational tools and machines are imported, any disruption in logistics, trade policy, or geopolitics can slow factory modernization across entire regions. This dependence constrains productivity growth and leaves the U.S. industrial base exposed. For the United States to

sustain a leadership position in advanced manufacturing, the means of production must be built alongside the industries that use them.

**Recommendations**

**Extended tax incentives for automation adoption.** According to the Association for Advancing Automation, tax incentives are the single most important lever for automation investment. Congress should establish a dedicated investment tax credit for automation, alongside extending and expanding the accelerated bonus depreciation in Public Law 119-21, which is already driving purchases among our customers. Both should address barriers unique to small and medium manufacturers, and eligible costs should include not only capital equipment but also the integration and training that typically determine whether a project succeeds. Robots-as-a-service should be depreciable.

**Tariff-funded grants.** Congress should also authorize tariff-funded grants for robotics adoption, targeted at the small and mid-sized manufacturers who most often stall in the final integration phase.

**Capital Equipment Credit for robotics subsystems.** A refundable investment tax credit for U.S. manufacturing of robotics subsystems would help offset the capital intensity of re-establishing domestic production lines and attract private investment in precision manufacturing.

**National manufacturing loan program for robotics and advanced manufacturing.** The program should offer long-term, Treasury-rate financing allowing manufacturers to start up, expand production lines, buy advanced equipment, or hire and train workers at a cost of capital they cannot access in the private market. Projects should focus on expanding U.S. productive capacity in robotics, advanced materials, precision machining, semiconductor tooling, and other strategically important sectors — precisely the gaps where commercial lenders hesitate but national competitiveness demands investment. This is the same model that enabled the first wave of U.S. utility-scale solar plants, retooled Ford and Nissan's factories, and helped Tesla scale its production line. To safeguard taxpayers, every application should undergo a structured technical and financial viability review. Only projects with strong repayment prospects, demonstrated demand, and clear job-creation or supply-chain benefits should advance to financing.

**Defense Production Act and Buy American procurement.** Congress should direct the Department of Defense to expand its use of Title III of the Defense Production Act to include purchase guarantees for domestically manufactured robotics hardware, as it has done for batteries and critical minerals. In parallel, a clear Buy-American Robotics Preference for federally funded automation projects would ensure that public procurement itself strengthens strategic supply chains rather than deepening import dependence.

**Multi-year government offtake agreements for U.S.-designed and U.S.-built robotic components and final systems.** Congress could encourage private sector robotics investment

with binding multi-year offtake commitments for U.S.-designed and U.S.-built robotic components and final systems. Specifically, Congress could authorize two complementary mechanisms, both modeled on authorities already in use: (1) volume guarantees – 3- to 5-year, multi-vendor purchase commitments at a floor price, led by DOD with participation from DOE, DHS, USPS, GSA, and Commerce – extending the multi-year procurement framework under 10 U.S.C. §3501 already applied to ships, aircraft, and munitions including HIMARS and ATACMS; and (2) advance purchase agreements – single-vendor, performance-contingent commitments for capability-specific systems. This is the single most leveraged, lowest-cost industrial-base intervention available: demand certainty applied to systems the government was already going to need.

**"Strategic Capital Fund" for robotics**. Analogous to DOD's Office of Strategic Capital's critical-minerals work — long-duration, patient capital co-invested with private limited partners, specifically targeting the component supply chain.

Together, these policies would anchor a resilient ecosystem of American component suppliers and eliminate one of the most persistent chokepoints in industrial modernization.

## Pillar 2: Establish a Center of Robotics and Manufacturing Excellence in every state

**Summary**

Congress should authorize one Center of Robotics and Manufacturing Excellence in every state, resourced to provide hands-on access to AI-native robots and other modern equipment as well as training across the full range of the latest production techniques in machining, forming, finishing, joining, inspection, wire-harness assembly, robotic automation, and AI-driven process control. Centers should deliver hands-on robotics assessments, integration support, and workforce training with industry-recognized certification to small and mid-sized manufacturers in their state. Curriculum, standards, and technical guidance should be developed in partnership with the Advanced Robotics for Manufacturing Institute, local companies, universities, community colleges, and national labs. This appropriation should give every American manufacturer, in every state, a local front door to our National Robotics Strategy.

The foundation for this work already exists in this Committee's own authorities: the Manufacturing Extension Partnership and the Manufacturing USA network.

**The Problem**

Most American manufacturers lack a true, high-quality resource to learn the modern art of manufacturing – a place to master the latest production techniques, experiment with new equipment, and receive hands-on technical training.

In surveys of Standard Bots customers, partners, and industry colleagues, small and mid-sized manufacturers consistently cite three urgent needs: automation, workforce development, and

digital transformation. Persistent labor shortages, especially in rural areas, limit their growth and competitiveness. According to the National Association of Manufacturers, 74% of American manufacturers have fewer than 20 employees.[3] Many want to adopt automation but lack the technical know-how to integrate robots with their existing equipment and processes. To expand sustainably, they need better access to affordable training and demonstration facilities, clear cybersecurity guidance, and streamlined connections to experts who can help them de-risk and invest in new technology with confidence.

The existing MEP program is not meeting these needs at the scale required. Most of Standard Bots' customers have not worked with an MEP center, and those who have often describe their experience as uneven. This is a coordination and resourcing problem, not a mission problem – MEP and Manufacturing USA are exactly the right institutions to lead this work. They just need to be equipped to do it. Congress should concentrate funding on fewer, higher-quality sites instead of diluting resources across many underfunded sites that are less useful to U.S. manufacturers.

**Recommendations**

**Authorize and appropriate a Center of Robotics and Manufacturing Excellence in every state.** Each Center should be staffed with robotics engineers, integration specialists, and workforce trainers. Centers should house a representative array of modern production equipment across the critical processes named above and operated under shared national standards. Manufacturers in every state should be able to walk in, test equipment, compare technologies, and leave with a plan for automating their operations. Companies should be able to contribute equipment, offer training sessions, and pay scaled fees for participation.

**Set and enforce consistent quality standards.** The MEP National Network should oversee consistent quality across all state centers, working with the partnerships named above to maintain shared curriculum, certification standards, and technical guidance. Training should be delivered through in-person labs, nationally standardized curricula, and online courses, drawing on a roster of vetted instructors across all states.

**Build a national digital library and shared operating system.** NIST should develop a centralized digital library aggregating training modules, best-practice playbooks, case studies, and course materials from every Center. This "manufacturing OS" would allow any worker or company in the country to find proven solutions and request local support. Centers should share a unified website, a national training calendar, and a map of each Center's specializations so manufacturers can easily find the right expertise.

**Accelerate pre-competitive R&D and translate it to deployment.** The Manufacturing USA institutes should be resourced to accelerate pre-competitive R&D in robotics, AI for manufacturing, cybersecurity, and supply-chain resilience. Findings should be translated through Centers of Robotics and Manufacturing Excellence for national deployment, so that

[3] "Facts About Manufacturing", National Association of Manufacturers, 2025, https://nam.org/manufacturing-in-the-united-states/facts-about-manufacturing-expanded/

research developed at ARM, AIM Photonics, and peer institutes reaches every small manufacturer in every state.

**Publish open best practices.** Centers should research, document, and publish open best practices in manufacturing software, automation, engineering workflows, AI-enabled factory optimization, cybersecurity, and supply-chain resilience – so that a family-owned shop anywhere in America can operate at the same frontier of efficiency as the largest manufacturers in the world.

**Modernize access and branding.** Eliminate mandatory pre-audits and allow manufacturers to select services directly through streamlined digital intake forms. Provide clear, modular options – automation integration assistance, cybersecurity readiness, robotics demonstrations, process optimization – reducing friction and speeding engagement. Unify and standardize branding across all states to eliminate confusion from disconnected local identities, and conduct proactive outreach to every manufacturer in each state with case studies, course offerings, and upcoming events.

**Clarify technology demonstration policy.** Issue updated guidance clarifying that educational demonstrations of equipment, robotics, automation, or software are not prohibited endorsements. This will enable Centers to host meaningful, vendor-neutral technology showcases – critical for smaller firms that cannot attend distant or costly trade shows.

Together, these changes transform the MEP National Network from a diffuse, under-resourced set of state programs into a coordinated industrial capability that matches the scale of the challenge.

## Pillar 3: Build America's Next-Generation Robotics Workforce

**Summary**

America has been shedding manufacturing workers for decades – partly from offshoring, partly because older workers retire earlier than in other sectors, and partly because young Americans stopped seeing manufacturing as a career worth choosing. For decades they were told the surest path to success ran through a four-year degree, and that manufacturing was dull, dirty, and dangerous work that didn't pay well either. The Manufacturing Institute and Deloitte project 1.9 million U.S. manufacturing jobs will go unfilled by 2033 – a shortage that could cost the U.S. economy as much as $1 trillion.[4]

[4] "Taking charge: Manufacturers support growth with active workforce strategies", Deloitte, 2024, https://www.deloitte.com/us/en/insights/industry/manufacturing-industrial-products/supporting-us-manufacturing-growth-amid-workforce-challenges.html

But the ground has shifted due to AI and robotics, and the opportunity for young American workers has never been greater. Demand for robotics technicians has doubled since 2022.[5] American robotics companies like ours are hiring talented people as fast as we can find them.

Working with AI-native robots is not dull, dirty, and dangerous – it is creative, technical, and places a young worker at the frontier of the most transformative technology of their lifetime. Robotics is now core to mechanical engineering education at America's leading universities, from Carnegie Mellon to Georgia Tech, Virginia Tech, and Purdue.

Congress should meet this moment with workforce training grants to MEP Centers of Robotics and Manufacturing Excellence, community colleges, and trade schools; tax credits for employers who hire and train apprentices in robotics, mechatronics, and advanced manufacturing; scholarships and loan forgiveness for Americans entering high-demand manufacturing trades; and a national campaign – in partnership with industry – to show young Americans that working with robots is the most exciting, best-paid, and most patriotic career they can choose.

**The Problem**

America's productivity challenge is just as much a talent challenge as it is a machinery or capital challenge. The nation faces a widening gap between the skills that modern manufacturing demands and the training that most workers receive. A Standard Bots user recently reflected that his own engineering education did not cover practical skills like selecting automation equipment or programming the Programmable Logic Controllers (PLCs) and electrical controls that run a modern factory floor.

As robotics, automation, and AI systems become essential across precision machining, welding, assembly, inspection, and logistics, too few technicians and engineers are entering the pipeline to design, integrate, and maintain them. The American Welding Society projects the U.S. will need 320,500 new welders by 2029.[6] The National Association of Manufacturers reports over 400,000 unfilled manufacturing jobs right now. Aerospace and defense, a nearly $1 trillion U.S. industry growing 5% annually, cannot hire machinists, welders, and inspectors fast enough.[7]

Existing programs – apprenticeships, community-college certifications, state workforce boards – are valuable but under-enrolled relative to demand, and the absence of a coordinated national effort threatens to slow the diffusion of the very technologies that could lift productivity and

[5] "AI boom is fueling demand for skilled trades—and demand for technicians, HVAC workers, and electricians is soaring, with six-figure salaries to match", Fortune, 2026 https://fortune.com/2026/03/20/skilled-trade-demand-randstand-report-electricans-technicans-construction-workers-six-figure-salaries-data-center-boom/

[6] "Shining A Light On The Welding Workforce", American Welding Society, https://weldingworkforcedata.com/

[7] "2025 Facts & Figures: American Aerospace & Defense Industry Continues Economic Dominance", Aerospace Industries Association, 2025, https://www.aia-aerospace.org/news/american-aerospace-defense-industry-continues-economic-dominance/

wages. Left unaddressed, this skills shortage will undermine the promise of every other pillar in this plan.

**Recommendations**

**Position Centers of Robotics and Manufacturing Excellence as the connective tissue between employers, schools, and workers.** Centers should regularly survey manufacturers, identify emerging skill gaps, and translate real-time industry needs into actionable curriculum updates for nearby trade schools, community colleges, and apprenticeship programs. They should host joint planning forums, share forecasting data, and advise schools on what equipment, certifications, and teaching capacity are required. This turns each Center into the state's industrial intelligence hub, ensuring training pipelines are aligned with the technologies and roles manufacturers are hiring for today – not five or ten years ago.

**Fund K-12 robotics and STEM grants.** Competitive grants for middle and high schools to co-develop robotics curriculum with local industry – including equipment stipends, mentorship, and field-trip programs – provide the early exposure to real-world automation that today's career-guidance environment does not.

**Establish a Master Trades Instructor Credit.** A $5,000 federal tax credit for retired machinists, CNC operators, welders, electricians, and other skilled tradespeople who mentor apprentices would bridge the generational knowledge gap in practical trades education. This is a low-cost, high-leverage policy: the people who know how to do the work are available, and a modest credit unlocks their capacity to teach the next generation.

**Per-apprentice hiring credit.** $10,000–$15,000 refundable credit per registered robotics or mechatronics apprentice hired and retained for 12 months — parallel to the Work Opportunity Tax Credit framework but more generous and trade-specific.

**National apprenticeship standards for robotics technicians.** Working with MEP Centers of Manufacturing Excellence, ARM, and the National Science Foundation's Advanced Technical Education program, Congress should establish national standards for robotics technicians, machinists, and maintenance technicians – with curriculum templates and technical assistance made available to community colleges nationwide.

**Use the Workforce Innovation and Opportunity Act to fund training that links directly to industrial needs.** The WIOA provides an existing framework for workforce training grants; it should be directed toward high-demand manufacturing trades with clear employer demand and wage outcomes.

**Scholarships and loan forgiveness for high-demand trades.** Americans entering robotics, mechatronics, welding, machining, industrial electrical work, and other skilled trades should have access to scholarships and federal loan forgiveness on par with programs that support

teaching, nursing, and military service. These are mission-critical national careers and should be treated as such.

**A national campaign – in partnership with industry – to show young Americans what modern manufacturing actually looks like.** Working with robots is creative, technical, well-paid, and deeply connected to American national security and prosperity. Too few young Americans know this. A coordinated federal-industry campaign can change the cultural story in a way that a thousand individual recruiting efforts cannot.

## Pillar 4: Defend American manufacturing from foreign market manipulation

**Summary**

Even as American manufacturers build the best robots in the world, foreign governments are rigging the market against them. China's 'Made in China 2025' industrial strategy, alongside its larger 15th Five-Year Plan (2026–2030), subsidizes China's domestic robotics industry at every level, from research to components to finished systems, allowing Chinese robots to be sold in U.S. markets at or below cost. This is not a hypothetical threat. We have seen this exact playbook before. In the 2010s, aggressive Chinese subsidies flooded the global market with underpriced solar panels and wiped out much of the U.S. solar manufacturing base, and America ceded a critical energy supply chain to a strategic competitor. We cannot afford to repeat that mistake with robotics.

The stakes are even higher this time. Robotics is not just an economic sector – it is national security infrastructure. AI-native robots use cameras, sensors, and network connections to perceive and operate on the factory floor, which means a foreign-built robot sitting inside an American defense contractor, semiconductor fab, or critical supplier is a vector for espionage or sabotage. Long-term dependence on a strategic competitor for the machines that build our economy – and our weapons – is a risk this Congress should not accept.

Congress should meet this moment with a coordinated mix of tools: tariffs on subsidized foreign robots and components, export controls on critical U.S. robotics technology, federal procurement preferences for American-made systems, investigation of foreign dumping through the International Trade Commission, and an outright ban on Chinese-built robots in defense, ITAR, and critical infrastructure facilities. Combined with the production incentives and workforce investments outlined earlier, these protections give American robotics the level playing field to compete, scale, and lead.

**The Problem**

China named high-end numerical control machinery and robotics as key industries in its "Made in China 2025" strategy, and has doubled down on that commitment in its 15th Five-Year Plan, which prioritizes robotics, AI, and advanced manufacturing as "New Quality Productive Forces"

for breakthrough investment through 2030. Chinese robot manufacturers are eligible for state-led industrial policies — subsidies, preferential loans, tax breaks, and procurement preferences — that distort global markets and disadvantage U.S. companies. According to the International Federation of Robotics, China now operates more than 2 million industrial robots — approximately 4.5 times the stock of Japan, the second-largest holder — and in 2024 installed more industrial robots than the rest of the world combined.

Chinese state-led industrial policies have produced an environment where Chinese-origin robots are sometimes sold in the United States at prices industry analysts believe are below the cost of manufacture, creating a punishing environment for American robot makers.

Unfair competition with Chinese robot manufacturers will have significant negative impacts on American manufacturing and employment. It will be impossible to return manufacturing to the United States at scale without affordable, accessible, AI-native robots. We have a narrow window to act. Chinese robots are not yet dominant in U.S. imports compared to Japanese and European competitors, but their inexpensive products are entering the market as domestic demand for automation accelerates. Any reliance on Chinese-origin robots leaves a robotics-assisted manufacturing renaissance vulnerable to Chinese control or exploitation – including through coercive export restrictions like those that China has imposed on critical minerals.

And the security stakes compound the economic stakes. Consider the implications: foreign robots, with cameras and network connections, operating inside our most critical facilities. We do not allow this in ITAR-controlled facilities because the law prohibits it. But across the rest of American manufacturing – including the semiconductor fabs, defense suppliers, and critical infrastructure producers that build modern weapon systems – there is no equivalent protection. Robotics is now foundational to advanced manufacturing, and advanced manufacturing is foundational to our economic resilience, critical infrastructure, and national security. Dependence on China for this core technology would severely weaken America's ability to build systems at scale. Matching foreign robotics capabilities is not enough; the United States must lead.

**Recommendations**

**Ban Chinese-origin industrial robots and supply chain.** U.S. manufacturing facilities, especially those producing defense equipment, semiconductors, critical minerals, or other strategic goods, should not rely on foundational technology from our key competitor, China. Robots running AI are required to be connected to cameras and often networked, and it would not be hard to hide a kill switch on a microcontroller or board level to remotely shut down our factories. Congress should authorize the executive branch to prohibit such systems in these settings, on the same logic that governs foreign-built telecommunications equipment today.

**Continue to allow foreign companies, including Chinese firms, to establish co-manufacturing joint ventures in the United States for robotics components.** Critical

subsystems are today made almost exclusively abroad, and rebuilding that capacity from scratch with domestic capital alone will take longer than we have. The 2023 Ford–CATL battery licensing structure in Michigan shows the model can work today with Chinese IP inside a U.S.-owned, U.S.-operated facility. The point is to use U.S. market access as leverage to move production capacity inbound — not outbound.

**Tariffs on subsidized foreign robots and components** to counteract state-directed pricing and create a genuinely fair competitive landscape for American suppliers. Tariff revenues from this pillar should be directed back into the adoption grants proposed in Pillar 1, so that protecting American producers also accelerates American adoption.

**Strengthen federal review of foreign acquisitions of American robotics companies.** Foundational robotics technology has been leaving the U.S. for decades: American C. Walton Musser patented strain wave gearing in 1955 at United Shoe Machinery, the core precision reducer technology in most modern robot joints; today the U.S. operation, Harmonic Drive LLC in Massachusetts, is a wholly-owned subsidiary of Japan's Harmonic Drive Systems Inc., which consolidated full ownership in 2021. More recent losses have been direct acquisitions: iRobot — the MIT spinout behind the Roomba — has been acquired out of bankruptcy by its longtime Chinese contract manufacturer Shenzhen Picea Robotics; Michigan integrators Paslin and HTI Cybernetics were sold to Chinese acquirers in 2016–2017; Boston Dynamics now sits under Hyundai. Germany saw the same pattern — most visibly with China's Midea acquiring Kuka in 2016 — and tightened its screening regime in response, adding robotics, AI, and semiconductors in 2021 to the list of sectors triggering mandatory pre-closing review at voting-rights thresholds as low as 20%. American robotics firms should be free to compete in global markets, but Congress should direct CFIUS to strengthen its treatment of robotics under the Foreign Investment Risk Review Modernization Act of 2018: lower voting-rights thresholds for mandatory filings on any foreign acquisition in the sector, expand review to licensing arrangements and technology-transfer-heavy joint ventures that flow U.S.-developed IP outbound to any foreign partner, and close the minority-investment loophole. The goal is not to prohibit commercial cooperation — inbound joint ventures in which foreign partners manufacture robotic components for the U.S. market should remain permitted, and in many cases encouraged, as a path to lower-cost domestic supply. The concern is the reverse flow: arrangements that transfer meaningful U.S. robotics IP, know-how, or production capacity abroad, with review outcomes appropriately weighted by the acquirer's home jurisdiction and its relationship to the U.S. The semiconductor precedent is direct — FIRRMA's 2018 expansion of CFIUS jurisdiction to non-controlling investments closed the same loopholes foreign acquirers, particularly Chinese ones, had previously used to accumulate U.S. semiconductor IP through minority stakes and JVs.

**Federal procurement preferences for American-made systems.** A clear Buy-American Robotics Preference for federally funded automation projects – and an outright prohibition on foreign-built robots in defense, critical infrastructure, and ITAR-controlled facilities – would ensure that public dollars strengthen strategic supply chains rather than deepen import dependence.

**Investigation of foreign dumping through the International Trade Commission.** Where below-cost pricing is documented, existing trade-remedy authorities should be used to their full extent, as they have been in solar and steel. The ITC should open a Section 332 investigation into the U.S. robotics industry to develop the evidentiary record required for further action.

## Conclusion: A National Robotics Strategy for America

America is standing at a crossroads. AI and robotics give us a once-in-a-generation opportunity to rebuild a competitive manufacturing base that strengthens the middle class, drives long-term economic growth, and secures our leadership in the world economy. Every country leading the world in manufacturing today – China, Germany, Japan, Korea – built that position on the back of a coordinated national strategy for robotics and advanced manufacturing. The United States has no such strategy. It is past time we had one.

The National Commission on Robotics Act, introduced by Chairman Obernolte, is a strong first step — it would convene the expertise needed to build this strategy on a serious, durable foundation, and I urge this Committee to move it forward. Standard Bots stands ready to contribute in any way that helps.

The four pillars outlined in this testimony form the core of a future national robotics strategy:

- **Build American robots, and put them to work in American factories,** so that American manufacturers can make the components, assemble the systems, and buy the equipment they need to compete.
- **Establish a Center of Robotics and Manufacturing Excellence in every state**, so that every American manufacturer — in every state — has a local front door to our National Robotics Strategy.
- **Build America's next-generation manufacturing workforce**, so that Americans have the skills to design, deploy, and service these systems.
- **Defend American manufacturing against foreign market manipulation** that threatens to hollow out our industrial base before it gets off the ground.

These pillars work together. Production incentives only pay off if manufacturers know how to adopt what is produced. Adoption only happens if there is a workforce trained to operate it. Workforce investments only generate returns if American producers have a fair shot in the market. And a fair market only exists if Congress defends it. No single pillar is sufficient on its own. Together, they form a plan that can work.

America has the talent, ingenuity, grit, and drive to lead the world in making things again. But every month we wait, our manufacturing base slips further behind. The hundreds of companies we work with across the country every day are not waiting. They are already putting robots to

work to compete, grow, and thrive. Federal policy should meet them where they are, and accelerate what they have already started.

Chairman Obernolte, Ranking Member Stevens, Chairman Babin, Ranking Member Lofgren, and Members of the Subcommittee, thank you for the opportunity to speak today. I appreciate the bipartisan work this Committee is doing to strengthen American industrial competitiveness, and I look forward to continued collaboration as you develop the legislation that will define the next era of American manufacturing. The robots should be made in America. The strategy should come from this Committee. And the time to act is now.

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# Appendix: Methodology and Contributions to Policy

The recommendations in this testimony are informed by our experience building a vertically integrated American robotics company and by surveys conducted across Standard Bots' network of thousands of U.S. manufacturers, engineers, and roboticists. More than one hundred companies shared their challenges and successes with automation, their experiences using federal and state programs, and the difficulty of recruiting a skilled workforce. While this sample is not statistically representative and may carry some response bias, the consistency of the feedback reflects themes we hear again and again from manufacturers nationwide.

Standard Bots has contributed industry perspectives during National Security Fly-In Weeks with leadership at the Department of Defense, the Department of Commerce, the U.S. National Security Council, and the Congressional Joint Economic Committee. We have provided input to staffers working on a National Robotics Strategy, to researchers studying modernization of the Manufacturing Extension Partnership National Network, and submitted public comments to the Section 232 National Security Investigation on Imports of Robotics and Industrial Machinery.

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