

A NATIONAL MANUFACTURING GUARD: BUILDING A MORE RESILIENT U.S. MANUFACTURING BASE

A White Paper by the Manufacturing USA Institutes

America's long-standing ability to meet and overcome any crisis is rooted in a spirit of innovation, a capability to manufacture, and a people with skills and a commitment to succeed. The current COVID-19 crisis has challenged America's ability to respond rapidly to a threat and exposed vulnerabilities that must be addressed to ensure America's national and economic security, and public health, in the face of threats such as pandemics, war, and the rise of more technologically advanced adversaries. As we recover from the current crisis, and prepare for the possibility of the next, it is well past time to think about our security and competitiveness as linked to our manufacturing, supply chain, and workforce capabilities.

The 2018 National Defense Strategy calls for increased and sustained investment, innovation, and discipline from all aspects of America's industrial base to guarantee the nation's ability to compete in an increasingly complex security environment. This environment is defined by rapid technological change that has allowed adversaries to challenge America's military and economic dominance. The proliferation of knowledge and easy access to technology typically reserved for well-funded nations is eroding America's historical advantage.

Within that environment, highly interdependent companies across multiple supply chains are challenged with managing and mitigating the volatility of scarce resources (people, materials, supplies, transportation) leading to products which cannot be manufactured and delivered, or to customers who are unable to access them in a timely manner. To restore domestic control, resilience, and flexibility, a multi-faceted national program must be developed to map the current, architect the new, and implement an optimized manufacturing base that affords the U.S. strategic control over critical supply chains. This undertaking will require a systems-level reimagining of manufacturing and talent development with a focus on optimizing what already exists in the U.S. domestic asset base and flexibly adding distributed capacity for basic feed stocks, intermediates, and finished products that are currently only manufactured overseas. The Manufacturing USA institutes, which are each tasked with establishing and growing ecosystems around specific technology areas, are uniquely positioned to answer the call and build a more resilient U.S. manufacturing base to better prepare for the next crisis. To address these needs, we propose the following:

I) Create a national Manufacturing Guard: Agile realignment of supply chains, particularly in a crisis, is not an easy task. Readiness planning and training for this eventuality can make an enormous difference. We make the analogy to the National Guard's readiness to defend our country to propose a national Manufacturing Guard. This group would be comprised of leading corporate experts in manufacturing and production, and they would train annually for agile and effective response during a crisis to mitigate scenarios that threaten supply chains and impede immediate availability and access to necessary products across the country. The participants will be our nation's experts in resilient supply chains, and they will be poised to help our nation deploy the material and human resources it needs when faced with a crisis.

II) Create a national, real-time Supply Chain Data Exchange: The Supply Chain Data Exchange infrastructure would enable a secure, end-to-end data backbone for real time visibility and the mitigation tools necessary to support the resilient production of critical products needed during Covid-19 and future supply chain disruptions. Supporting the Manufacturing Guard in their mission to ensure the reliable access to critical supplies, this initiative will accelerate the creation of U.S. common infrastructure,

solutions, data models, data engineering and integration required to ensure that U.S. small, mid-size, and large multinational companies are strongly equipped to offer Resilient, Proactive and Digitally Transparent Supply Chains. The Supply Chain Data Exchange optimizes the usage of critical resources as a universal open platform enabling secure, standardized, end-to-end exchange and visibility of shareable supply chain intelligence and real time data with desired partners, including: inventory and location, safety stock, flex capacity; transportation needed/available; human resources needed/available; real-time overlay of emergency impact to companies/locations; identification of bottlenecks in resource flow; and, proactive testing of resiliency and weaknesses. The Supply Chain Data Exchange will also serve as a platform to understand and map critical gaps in U.S. manufacturing capabilities and infrastructure, identify critical feed stock limitations across various sectors, and to improve existing or design new manufacturing networks that afford greater domestic control over strategically important supply chains.

III) Create the Technology Corps: The Technology Corps will ensure Americans can be rapidly educated on emerging advanced manufacturing technologies. The Technology Corps will establish a workforce pipeline to respond to national security needs and will be a pipeline into the national Manufacturing Guard, providing individuals who will have worked with industry leaders and understand the importance of keeping our manufacturing capabilities up to date and safe. The Technology Corps will accelerate opportunities for the 33 million Americans between the ages of 18-24 with a 21st century skills gateway to enable transitions to higher education, military service, national service, or entry into the workforce. It will also provide opportunities to learn and work at defense and other government agencies expand the use of apprenticeships to high-tech and high-skill fields.

IV) Form a Resilient Manufacturing Task Force and a Resilient Manufacturing Advisory Council: A Resilient Manufacturing Task Force is required to convene and develop a plan to create the national Manufacturing Guard, the Supply Chain Data Exchange, and the Technology Corps. The Task Force will also be able to begin mapping critical gaps in the supply chains across sectors and identify opportunities to refine current, and design new, technologies for an optimized system design. The Task Force, comprised of leading experts in supply chain and manufacturing technologies representing various stakeholder groups including the Manufacturing USA institutes and their members, will frame and prioritize key issues around policy, operations, oversight, and incentives for participation in the Manufacturing Guard, Supply Chain Data Exchange, and Technology Corps. The Task Force will issue recommendations and discuss the need for a Resilient Manufacturing Advisory Council to help oversee and coordinate these Activities moving forward to ensure a more resilient and flexible manufacturing infrastructure for the nation.

By leading the charge to create the national Manufacturing Guard, including through the formation of the Resilient Manufacturing Task Force and Advisory Council, the Supply Chain Data Exchange, and the Technology Corps, the Manufacturing USA institutes and their ecosystems will ensure our economic and national security in advance of the next disruptive national or global crisis by building a more resilient U.S. manufacturing base.

AFFOA
AmericaMakes
BioFabUSA
IACMI
MxD
NIIMBL
RAPID

AIM Photonics
ARM
CESMII
LIFT
NextFlex
PowerAmerica
REMADE