



AMERICAN ACADEMY OF ARTS & SCIENCES

Building Resilient and Ethical Supply Chains for a Post-COVID World

Executive Summary

From shortages of PPE and barren grocery store shelves at the beginning of the COVID-19 pandemic to a \$60 billion shortage of semiconductor chips for automobiles a year later, the fragility of our economy, structured around globally dispersed and fragmented supply chains, has become a pressing issue for scholars and policy-makers alike. The COVID-19 pandemic has exposed the world's lack of preparedness for such an immense disruption, crippling our globally dispersed networks producing essential health, food and other critical components for our economy and society. Issues already inherent to the current structure and governance of global supply chains, including poor environmental and social standards and human rights transgressions, have gained newfound attention amidst global calls for justice and accountability. This unprecedented occasion presents a unique opportunity for rethinking our supply chain networks to be resilient, ethical, and sustainable. The American Academy of Arts and Sciences, with its interdisciplinary membership and independent, non-partisan approach, is well positioned to address these gaps and offer a set of recommendations for both policy and practice. The Academy will convene a group of interdisciplinary experts who will address the social and ethical dimensions of supply chains and produce useful recommendations for government, industry, and non-profit action.

The Context

COVID-19 is revealing the vulnerabilities of our fragile, globalized society as it continues to sweep the world, devastating communities, disrupting economies, and straining international relations. The pandemic has exposed the world's intense interdependence on trade for the provision of goods and services, particularly evidenced by the failure of supply chains to meet the demand for necessary medical and scientific equipment to fight the pandemic, including lab reagents and machinery for producing accurate COVID-19 testing kits; personal protective equipment (PPE) to protect healthcare and essential workers; and for equipment such as respiratory ventilators and drug therapies to treat infected patients in critical conditions.

In addition to the fractures that have been exposed in our healthcare system, the pandemic has also revealed devastating weaknesses in the country's food supply networks. Overnight, workers in the food service industry, including restaurants and fast-food workers, delivery drivers, grocery employees, and more, were put on the frontlines and suddenly reclassified as "essential workers." Although the food supply chains network proved relatively resilient for most Americans in the face of COVID, it did reveal severe inequities, leading to food deserts and a hunger crisis. The human costs of production, distribution, and delivery in unsafe conditions have been severe and disproportionately borne by individuals from some of the most vulnerable communities. The U.S. was entirely unprepared to protect these suddenly essential workers, such as with necessary PPE and health insurance coverage. Nor did the U.S. have sufficient protections in place for those lacking means to afford groceries.

Beyond exposing the vulnerabilities in our current medical and food supply chain networks, the pandemic also revealed the need to reevaluate the security of our nation's supply chains and amplified the entrenched ethical and social injustice issues in these networks.

Corporations in the U.S. and many other wealthy countries have reduced costs and increased profits by outsourcing much of their production and thus reducing their labor costs. At the start of COVID-19, this led to significant challenges in acquiring necessary materials to fight the pandemic in a timely manner. The vulnerabilities of our system of globally fragmented and dispersed supply chains became highlighted when deliveries of PPE or key components for manufacturing were disrupted with the freeze of international transit and trade. With significant testing manufacturers overseas and a surge in global demand, a similar shortage has risen in testing supplies, including test kits, swabs, and specific reagents. As another example, the majority of N95s masks, an essential protective equipment for essential workers on the frontlines of the pandemic, are produced in factories located in China. As the pandemic hit, China restricted its shipments of these essential materials to the U.S., posing a major obstacle for the U.S.'s ability to contain the pandemic in the U.S. and therefore, threatening U.S. national security. The U.S. has recognized the importance of resilient and secure supply chains for its national security. Recently the Biden Administration signed the Executive Order on America's Supply Chains to guide policy action to formally review supply chains in critical industries and key sectors.

Given the complexities and global nature of supply chain networks, many aspects of labor and production fall beyond the regulatory reach and oversight of any single country, and many large businesses, who use such labor, are unaware that their products are produced in such unethical conditions. Still others may be aware but choose to overlook these issues in pursuit of lower prices, higher profits, business growth, and a need to meet essential demands. For example, as COVID-19 swept the U.S., many workers were suddenly designated as "essential" but were not provided for with appropriate protections and support, including PPE and health coverage. Notably among these were workers in the meat industry, where businesses were unable to acquire necessary PPE to protect workers, leading to these factories quickly becoming hubs for COVID-19 infections. Despite this and other catastrophic events that have caused disruptions to critical supply chains, there remain significant vulnerabilities and blind spots that threaten the safe, ethical, and sustainable sourcing, production, and distribution of goods.

Even before the COVID-19 pandemic, questions about the ethics of material and labor sourcing and working conditions, and the equitable distribution of products were part of ongoing deliberations. However, a public awakening for justice and newly revealed unsafe and unethical elements of supply chains during the pandemic demand even higher-level assessments and accountability. A deep understanding and analysis of the ethical and social organization and impact of supply chains requires sector-specific knowledge combined with a cross-disciplinary exploration, drawing from such fields as business, logistics, sociology, political science, ethics, ethnography, human rights, philosophy, geography, and history, among others. Insights from such a variety of fields could provide important perspectives that would inform policies and strategies for rethinking and rebuilding global supply chain networks in the future to be both resilient and just.

About the American Academy

The American Academy of Arts and Sciences was founded in 1780 by John Adams, John Hancock, and 61 other scholar-patriots who understood that a new republic would require new institutions able to gather knowledge and advance learning in service to the public good.

Today, the Academy includes over 5,000 elected Fellows (domestic members) and 600 International Honorary Members, all of whom are recognized leaders in their respective fields. The breadth of the Academy's membership—drawn from the public and private sectors as well as from academia—is notable among learned societies. Drawn from every discipline and profession, the members are researchers, writers, and thinkers who shape the intellectual life of the nation and the world.

As an independent research center, the Academy is known for multidisciplinary, nonpartisan research that provides pragmatic solutions for complex challenges. Academy projects are grouped into several areas of study, including Science, Engineering, and Technology; Global Security and International Affairs; Education and the Development of Knowledge; The Humanities, Arts, and Culture; and American Institutions, Society, and the Public Good.

The Academy brings together scholars, artists, policymakers, business leaders, and other experts to examine the most pressing problems facing our world. Often, the Academy's influential studies help pioneer new fields that transcend disciplinary boundaries. Active outreach efforts ensure that Academy findings and proposals reach policymakers and leaders in government, higher education, business, and philanthropy. The Academy shares its research and recommendations through publications, meetings and events, and domestic and international policy forums.

The Academy's Approach

The American Academy, with its vast and distinguished membership that spans across disciplines and sectors, is well positioned to take on this work. This project will consider not only the logistical and economic dimensions of supply chain design and management, but also the ethical, social, and political factors that influence how goods are made and sold in the twenty-first century. By bringing leaders from business, industry, and government into productive conversation with experts from the social and behavioral sciences, the arts, and humanities, this work will leverage a key strength of the Academy—a holistic approach to complex issues that brings the best cross-disciplinary thinking to bear on critical issues that demand leadership and informed action.

To assess both the logistical challenges as well as the ethical considerations of the supply chain networks, the Academy proposes to convene a series of virtual Exploratory Meetings with experts from a variety of fields and disciplines during Fall 2021. A list of possible people to consult is included in **Appendix A**.

The specific objectives of these meetings will be to explore three key themes with the goal of identifying both the vulnerabilities and challenges, as well as identifying possible solutions, for each:

- i) *Healthcare & Food Security Supply Chains*: Gain a deep understanding the lessons learned for from COVID-19 for healthcare and food supply chains networks. Explorations of this theme may include discussions around public-private partnerships, governmental coordination, and the roles and definitions of essential workers

- ii) *Ethical Considerations:* Assess the important suite of ethical dilemmas COVID-19 has prompted, including unsafe working conditions, forced and stolen labor, equity in distribution of products, and considerations of globalization and power. Explorations of this theme may include discussions of how the private sector and government addressed such issues during COVID-19 and other past crises.
- iii) *National Security:* Examine U.S. supply chains with national security in mind, including how supply chains can be made most resilient and dependable for the long term and in the face of future crises while being careful not to promote dangerous isolationist and nationalistic policies. Explorations of this theme may include discussions of how the security community reacted to threats to U.S. national security in the face of COVID-19 and how it has reacted to previous national security crises, ranging from natural disasters to military threats, to identify lessons learned and solutions for securing the nation for the future.

Drawing on the discussions of each of these themes, the group will develop and propose actionable recommendations for U.S. policymakers and industry leaders that will specifically contribute to the creation of policies, regulations, and protocols that would make the conduct and operation of supply chains more resilient, sustainable, and ethical.

Potential products could include a workshop report or white paper, summarizing the key points emerging from the exploratory meetings and identifying solutions and policy proposals. Such products would target U.S.-based industry leaders and administration officials, sector associations, federal agency representatives, and congressional legislators, among others. The Academy will seek to use these products to raise awareness surrounding the issues with supply chains globally and to influence U.S. policymakers and business leaders to implement actions and policies to drive change.

The transformative potential of exploratory meetings and workshops is well-established at the Academy; past meetings have led to products that have ranged from influential white papers to subsequent, large-scale studies. Current multi-year Academy projects including [Making Justice Accessible](#), [Rethinking the Humanitarian Health Response to Violent Conflict](#) and [Meeting the Challenges of the New Nuclear Age](#) originated in exploratory meetings. Academy white papers developed from workshops, including [Science During Crisis](#) and [Beyond Technology: Strengthening Energy Policy through Social Science](#), were used to engage federal policymakers. The latter paper led the U.S. Department of Energy to establish a new SunShot program on Solar Energy Evolution and Diffusion Studies (SEEDS), which required participating engineering teams to include social scientists as integral team members.

The product of the supply chains meetings will be distributed widely to relevant audiences. In addition, we anticipate that contributors and Academy staff will meet with policymakers and business leaders to discuss the key findings and recommendations in the report or white paper. Potential impacts of this outreach could include increased attention and debate on global supply chain issues, new policies or practices at federal agencies, congressional legislation, and new or scaled company or industry initiatives or compacts.

Impact & Outreach

The reach and impact of outreach activities is as varied as the Academy's many projects themselves. In 2017 the Academy created a new position focused on outreach and impact to advance the Academy's dissemination efforts. The Director of Strategic Implementation collaborates with the Academy's programs, communications, membership engagement, and development staff to plan and implement outreach to increase the influence and impact of our projects and publications. The Academy also identified impact as the first of five strategic priorities defined in its 2018 institutional Strategic Plan, recognizing the importance and the relevance of the Academy's high-quality, nonpartisan work to its members and affiliates, policymakers, philanthropy, the media, and others.

Descriptions of specific projects and examples of impact can be found on the Academy's website at <https://www.amacad.org/our-work>. For example, the project New Models for U.S. Science and Technology Policy produced the report, *Restoring the Foundation*, that was released at a press conference and congressional briefing in Washington, D.C. Widely acclaimed, the report was cited by the U.S. Senate Committee on Commerce, Science, and Transportation in developing the 2015 America COMPETES Act, and prompted a call to action called "Innovation: An American Imperative" that urges Congress to enact policies and make investments to ensure that the United States remains the global innovation leader. More than 500 leading organizations from American industry, higher education, and science and engineering organizations have signed the statement.

Academy projects seek to achieve and measure success in three key ways:

1. *Inform or change the debate and discussion among experts or the public. This includes educating key audiences about a set of issues, raising awareness, and creating a greater sense of urgency and priority around pressing problems and potential solutions. Measures of success include:*
 - Reach (e.g. website visits; downloads; hard copies distributed);
 - Earned media (e.g. op-eds, citations, interviews);
 - Use in education (e.g. university courses/trainings);
 - Citation in legislation/testimony; and
 - Briefings/discussions with key audiences (e.g. Members of Congress).
2. *Supporting advocates and influencers who can advance recommendations and solutions. The Academy brings a respected, independent voice and our publications and experts are often supportive of the work other organizations are doing. The Academy can also use its convening power to improve coordination among groups working on similar goals. Indicators of success in supporting advocates include:*
 - Convenings and coordination of advocates on advancing Academy recommendations; and
 - Use of Academy work by advocacy organizations in their outreach to policymakers.
3. *Helping to catalyze implementation of new policies, practices, programs, or investment. The Academy convenes decision-makers in government, philanthropy, business, civil society, and higher education who can implement project recommendations. In some cases, the Academy may be positioned to take a more direct role in incubating or piloting new initiatives. Examples of success may include:*
 - New programs, practices, policies or investment that can be tied directly or indirectly to Academy recommendations and outreach to relevant audiences; and
 - The launch or incubation of new initiatives by the Academy and/or partner institutions.

Our outreach strategy and target audiences for this Supply Chains initiative will be guided by the specific findings of the exploratory meetings. The report or white paper will be distributed by targeted mail and email and online through the Academy website. We will also look for opportunities for earned media coverage including interviews with contributors and op-ed placement. Virtual briefings may include small meetings with agency and congressional staff and business leaders or larger briefings for policymakers or industry groups. The objective will be to raise awareness of our findings and position our work and contributors as a resource for decision-makers.

Initiative Leadership

Margaret Levi (Director, Center for Advanced Study in the Behavioral Sciences (CASBS), Professor of Political Science and Senior Fellow at the Woods Institute for the Environment) and **Richard Locke** (Provost, Schreiber Family Professor of Political Science and International and Public Affairs, Brown University) would serve as cochairs and intellectual leads in developing the exploratory meeting agenda in collaboration with Academy staff. As internationally recognized experts on issues including political economy, labor politics, democratic theory, and corporate responsibility, among others, Drs. Levi and Locke bring a necessary in-depth understanding of this complicated landscape and will be well positioned to work with the Academy in bringing the various perspectives that must be included to the table.