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Science and Technology Issues for the 119th Congress

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Science and Technology Issues for the 119th Congress

Science and technology (S&T) underlie a wide range of issues confronting the nation. The advancement of S&T can drive economic growth, help address national priorities, and improve health and quality of life. The ubiquity and constantly changing nature of S&T frequently create public policy issues of congressional interest. Federal support of research and development (R&D) has led to scientific breakthroughs and new technologies. Federal policies, some of which may indirectly support or limit the innovative capacity of the public and private sectors, govern many aspects of S&T activities.

This report spotlights some of the key S&T policy issues before the 119th Congress. Examples include cross-cutting subjects that affect S&T progress across a range of fields and disciplines as well as the capacity of the United States to innovate and maintain global competitiveness. The report also highlights new or rapidly developing areas of S&T that have the potential to transform current capabilities. Congress may assess the adequacy of existing policy frameworks or consider creating new ones to address these S&T issue areas, which are described briefly below.

- **Artificial Intelligence (AI):** AI holds potential opportunities, such as optimizing performance for complex tasks. Its use can also raise questions about bias, errors, security, copyright issues, and other concerns. The 119th Congress may consider issues related to the development of AI and AI infrastructure (e.g., data centers).
- **Biotechnology and Biomedical Research:** Recent advances in biotechnology and biomedical research hold the promise of longer, healthier lives and more productive industries, but they also raise policy challenges. Issues that the 119th Congress may face include laboratory biosafety and biosecurity, regulation of biotechnologies and research, and the federal response to emerging pathogens.
- **Climate Science:** S&T policy issues before the 119th Congress may include understanding the causes of extreme heat and addressing associated risks, and considering the role of nuclear energy in climate change mitigation.
- **Earth and Environmental Sciences:** Earth- and environmental-science-related issues before the 119th Congress include the improvement of extreme weather forecasting, plastic pollution, assessment of seabed deposits for potential critical minerals, and technologies to manage fisheries and other marine resources.
- **Federal Research Programs:** The federal government provides billions of dollars annually to institutions of higher education, federal laboratories, and the private sector to support R&D. The 119th Congress may consider issues related to federally funded R&D, including indirect costs for federally funded research, and topics related to research security and cooperation with China.
- **Information Technology and Social Media:** Rapid advancements in information technologies present several issues for the 119th Congress to consider, such as the accessibility of various types of data, cybersecurity concerns, considerations related to the ownership and use of social media platforms, and concerns related to minors online.
- **Innovation and Global Competition:** The 119th Congress may examine federal support for innovation, such as advancing defense innovation and overseeing the implementation of regional innovation strategies. Congress may also consider the role of patents in promoting innovation and competition, immigration in the U.S. S&T workforce, U.S. competitiveness in the semiconductor industry, and domestic battery manufacturing.
- **Space Policy:** Space policy topics that may come before the 119th Congress include the funding and oversight of the National Aeronautics and Space Administration and issues related to the commercialization of space.
- **Telecommunications:** Telecommunications technologies present several issues for policymakers, including oversight and potential reform of federal broadband programs and use of technologies to address the digital divide between people who have and do not have access to broadband, the Federal Communications Commission's Universal Service Fund, policies governing radio spectrum management and use, over-the-air radio broadcast transmissions, and the security and resiliency of telecommunication networks.

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Introduction

The federal science and technology (S&T) policymaking enterprise consists of an extensive and diverse set of stakeholders in the executive, legislative, and judicial branches. The enterprise fosters, among other things, the advancement of scientific and technical knowledge; science, technology, engineering, and mathematics (STEM) education; the application of S&T to achieve economic, national security, and other societal benefits; and the use of S&T to improve federal decisionmaking.

Federal responsibilities for S&T policymaking are highly decentralized. Many House and Senate committees have jurisdiction over important elements of S&T policy. Congressional appropriations committees, for example, provide funding for federal agency S&T programs. Congress also enacts laws to establish, refine, and eliminate federal agencies, programs, policies, regulations, and regulatory processes that affect science, technology, and engineering research and development (R&D) or rely on S&T data and analysis. In addition, dozens of informal congressional caucuses exist in areas of S&T policy such as R&D, specific S&T disciplines, and STEM education.

The President formulates annual budgets, policies, and programs for consideration by Congress; issues executive orders (E.O.s) and directives; and directs the executive branch departments and agencies responsible for implementing S&T policies and programs. The Office of Science and Technology Policy (OSTP), in the Executive Office of the President, advises the President and other Administration officials on S&T issues.

Executive agency S&T responsibilities are diffuse. Some agencies, such as the National Science Foundation (NSF), have broad S&T responsibilities. Others use S&T to meet a specific federal mission (e.g., defense, energy, health, space). Regulatory agencies have S&T responsibilities in areas such as nuclear energy, food and drug safety, and environmental protection.

This report serves as a brief introduction to many of the S&T policy issues that may come before the 119th Congress. Each section, presented alphabetically by topic, serves as a brief introduction to the topic and identifies other recent CRS products and the appropriate CRS experts to contact for further information and analysis.

Artificial Intelligence (AI)

Artificial intelligence (AI) holds potential benefits and opportunities, such as optimizing performance for complex tasks across multiple sectors. It also presents challenges, such as whether and how to regulate AI development, and raises questions about bias, error, security, copyright, and other concerns. The Trump Administration and Congress have been increasingly engaged in examining AI and developing policy to address concerns arising from AI development and use. Selected innovation and competition issues specific to AI and AI infrastructure (e.g., data centers) are discussed below.

Advances in AI

Interest in AI—including from the public, industry, the executive branch, and Congress—has grown alongside recent advances and widespread use of applications such as facial recognition technologies and generative AI models. As the uses of these and other AI technologies expand, so do the potential benefits and harms of the technology, as well as calls for congressional action. Congressional focus on AI began to ramp up in the 116th Congress and increased in the 117th and

118th Congresses in both the House and Senate. These activities included committee hearings, working groups creating AI policy road maps, the introduction of numerous AI-focused bills, and the passage of AI provisions in legislation. Enacted legislation specific to AI broadly, outside of defense and intelligence activities, includes the National Artificial Intelligence Initiative Act of 2020 (P.L. 116-283, Division E); the AI in Government Act of 2020 (P.L. 116-260, Division U, Title I); provisions focused on AI activities at certain agencies within the CHIPS and Science Act (P.L. 117-167); the AI Training Act (P.L. 117-207); the Advancing American AI Act (P.L. 117-263, §§7221-7228); and the Tools to Address Known Exploitation by Immobilizing Technological Deepfakes on Websites and Networks Act (TAKE IT DOWN Act; P.L. 119-12).

The complexity of AI systems, the pace of advancement in AI technologies, and the wide range of applications across sectors create policy issues of potential interest to the 119th Congress. These include questions regarding

- the balance of federal and private sector funding for AI;
- whether and, if so, how to increase access to federal resources (e.g., training datasets, computing power, and educational materials) for use in the public and private sectors, including academic research and start-up businesses;
- the effect of AI and AI-driven automation on the workforce, including potential improved efficiencies in certain industries, job losses, and needs for worker retraining;
- the challenges of educating students in AI, from teaching foundational concepts at the K-12 level to supporting doctoral-level training to meet increasing demand for AI expertise;
- the need for and effectiveness of federal and international coordination efforts in AI, as well as concerns over international competition in AI R&D and deployment;
- the incorporation of ethics, privacy, security, transparency, and accountability considerations in AI systems; and
- whether and, if so, how Congress might approach regulation of AI technologies.

The 119th Congress, along with the executive branch and courts, may continue to confront novel questions regarding how intellectual property law may apply to AI. These questions relate to, for example, the intersection of AI use and copyright and patent law.

For Further Information

Laurie Harris, Analyst in Science and Technology Policy

CRS Report R48555, *Regulating Artificial Intelligence: U.S. and International Approaches and Considerations for Congress*

CRS In Focus IF13051, *DeepSeek and the Race to Develop Artificial Intelligence*

CRS In Focus IF12426, *Generative Artificial Intelligence: Overview, Issues, and Considerations for Congress*

CRS Legal Sidebar LSB10922, *Generative Artificial Intelligence and Copyright Law*

CRS Legal Sidebar LSB11251, *Artificial Intelligence and Patent Law*

AI Data Centers

Data centers, together with advanced computer chips and cloud computing service, have served as the technological infrastructure to support the development, operation, and deployment of AI. A *data center* generally refers to a physical facility centralizing the hosting, pooling, and operation of information technology (IT) equipment and providing IT services such as data storage, processing, and transmission. AI's intensive computational tasks have led to increasing demand for IT capacities. The private sector is reportedly investing billions of dollars to construct large data centers that could house thousands of computer servers and associated equipment and draw over 100 megawatts of electric power at peak times.

The large scale and number of the planned AI data centers has raised policy questions. The projection of energy demand and supply between the AI and energy industries is uncertain. Policymakers are challenged to determine whether U.S. energy infrastructure meets AI demand and to assess effective ways to ensure that U.S. leadership in the global AI race remains unconstrained by energy supply. Data center construction is largely under state and local jurisdiction. The federal government has little direct oversight of the siting, operation, and energy consumption of data centers. Questions remain regarding the growth of AI data centers and their potential effects on nearby communities.

In the 119th Congress, several pieces of legislation would direct agencies to conduct studies and collect information regarding the potential impacts of data centers. For example, the Unleashing Low-Cost Rural AI Act (H.R. 5227) would direct the Secretary of Energy to study the impact of AI and data center growth on energy supply. The Data Center Transparency Act (H.R. 6984) would require the Administrator of the Energy Information Administration to collect certain information, including energy consumption by data centers and changes in household energy bills. The Clean Cloud Act of 2025 (H.R. 6179/S. 1475) would require the Administrator of the Environmental Protection Agency to collect information on certain data centers, including their locations, owners, electricity consumption, and utilities providers.

For Further Information

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CRS Report R48646, *Data Centers and Their Energy Consumption: Frequently Asked Questions*

CRS Report R48762, *Data Center Energy Infrastructure: Federal Permit Requirements*

CRS Report R48583, *Energy Tax Benefits for Data Centers: In Brief*

Regulation of AI in Health Care

The use of AI in health care can advance medical knowledge and care, though the possibility of AI-related errors in such contexts can pose uniquely high safety risks. The Trump Administration has often emphasized a desire to more fully and rapidly integrate AI into both U.S. Department of Health and Human Services (HHS) internal operations and the health and human services sector broadly. As a part of this effort, HHS has published the *U.S. Department of Health and Human Services Artificial Intelligence (AI) Strategy*, which describes a “framework to establish robust

HHS-wide AI infrastructure, accelerate AI innovation, and promote and ensure AI security throughout the health care and human services sector while respecting the privacy of Americans' identifiable information and complying with applicable law on the privacy and security of such information." HHS has also begun developing and deploying various AI tools to support internal agency functions.

There remain a number of considerations regarding the creation and deployment of AI tools in health care, including some stakeholder interest in developing boundaries for such tools and applications. Congress may consider developing boundaries, either broad or specific, regarding AI in health care and which stakeholders should be involved in these policy discussions. Congress may also pursue measures intended to support innovation in AI in health care, for example, funding related R&D programs or conducting oversight investigations into AI adoption in health care. Alternatively, Congress may choose not to act and allow the executive branch and other stakeholders to lead the direction of how AI is used in health care.

For Further Information

Nora Wells, Analyst in Health Policy

CRS In Focus IF13135, *Artificial Intelligence (AI) in Health Care: Recent Federal Activity*

Biotechnology and Biomedical Research

Recent advances in biotechnology and biomedical research may contribute to longer, healthier lives and more productive industries, but they also raise policy challenges. This section discusses issues that the 119th Congress may face in this area, including the federal response to emerging pathogens such as H5N1 influenza, federal regulation of laboratory-developed diagnostic devices, laboratory biosafety and biosecurity, and the regulation of agricultural biotechnologies.

Federal Government's Role and Response to H5N1 Avian Influenza and Other Emerging Pathogens

Avian influenza, sometimes referred to as "bird flu," is a disease caused by influenza A viruses. It can be highly contagious and has a history of infecting birds, wildlife, and humans. Avian influenza viruses are classified as either low or highly pathogenic depending on the severity of the disease they cause in poultry and other bird species. H5N1 is a subtype of highly pathogenic avian influenza (HPAI) virus. H5N1 influenza was first detected in 1996 in the Guangdong Province of the People's Republic of China (PRC, or China) and has been responsible for several outbreaks around the world since then. Wild birds, mainly waterfowl, have introduced the virus to new regions, where it has spread to other birds and mammals, such as dairy cattle. Several cases of humans infected with H5N1 influenza were reported in 2025. Most of these cases were associated with dairy and poultry workers who contracted the disease from infected animals, although a few human cases have no known connection with the dairy and poultry industry. H5N1 influenza does not efficiently spread among humans, but its continued spread among animal populations raises the risk that a strain with human pandemic potential could emerge.

Federal, state, and local agencies are responding to H5N1 influenza in various ways, including monitoring the spread of H5N1 influenza, creating policies to address potential impacts in industries such as poultry, and contemplating countermeasures for addressing the disease in animals and potentially humans. The 119th Congress may consider its role in and oversight responsibilities regarding the nation's biothreat response policies and programs more broadly, which include disease surveillance (e.g., of wildlife, farms, or people) and research programs

aimed at identifying and understanding pathogens. Regarding H5N1 influenza and other emerging pathogens, Congress might consider the effectiveness and coverage of existing biosurveillance practices and policies, the effectiveness of coordination among federal agencies, the status of international collaborations, research and data required to fill existing knowledge gaps, activities related to monitoring and planning for potential transmission to humans, and policies that lead to suppressing or eliminating avian influenza and other potential pathogens in the United States.

For Further Information

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CRS Report R48580, *Avian Influenza (Bird Flu) in the United States*

CRS In Focus IF12895, *H5N1 Avian Influenza: The Human Health Response*

CRS Report R48361, *Highly Pathogenic Avian Influenza—H5N1 Virus: CRS Experts and Points of Contact*

Food and Drug Administration (FDA) Regulation of Laboratory-Developed Tests (LDTs)

The appropriate regulation of LDTs—defined by FDA as a class of in vitro diagnostic (IVD) device designed, manufactured, and used within a single laboratory—has been an ongoing topic of congressional debate. LDTs are often developed and used in the context of emerging scientific knowledge, increasingly integrate complex technology, and have a considerable and growing role in informing clinical health care decisions.

FDA traditionally maintained that it had regulatory authority over LDTs as medical devices but largely implemented enforcement discretion, so most LDTs have not been subject to premarket review for safety and effectiveness or other regulatory requirements. However, FDA occasionally asserted authority over LDTs it considered to be higher risk, such as those used during emergencies (e.g., tests to diagnose COVID-19). FDA published draft guidance to regulate LDTs in 2014, but it was not finalized. Some stakeholders suggested that FDA should proceed instead through notice-and-comment rulemaking, while others suggested that it should defer to Congress to pass pertinent legislation.

The Verifying Accurate Leading-Edge IVCT Development (VALID) Act of 2023 (H.R. 2369), introduced in the 118th Congress, proposed a comprehensive risk-based regulatory framework for “in vitro clinical tests” (IVCTs), defined to include IVDs and LDTs, distinct from the regulatory framework for medical devices. No further action on this bill was taken in the 118th Congress.

Thereafter, FDA published a since-vacated final rule in May 2024 that would have phased out its general enforcement discretion approach for LDTs and phased in regulatory controls. In March 2025, a federal district court vacated this final rule, determining that LDTs do not meet the statutory definition of “device,” thus bringing the regulation of most, if not all, of these tests

outside FDA’s purview. The 119th Congress may consider revisiting the VALID Act or similar legislative proposals in light of this ruling to clarify FDA’s authority over LDTs. Congress may also consider other options, such as modifying other regulatory frameworks or monitoring possible effects of policy changes.

For Further Information

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CRS In Focus IF11389, *FDA Regulation of Laboratory-Developed Tests (LDTs)*

Oversight of Laboratory Biosafety and Biosecurity

In the United States, oversight of the life sciences, particularly laboratory biosafety and biosecurity, is exercised pursuant to a mixture of federal law, federal guidance, and self-governance. It is also dependent on the types of experiments and biological agents being used. No overarching federal law provides oversight of laboratory biosafety and biosecurity with enforceable standards and legal penalties, though the Federal Select Agent Program covers certain types of biological agents and toxins. Privately funded research is generally not covered by federal policy or agency guidance. In May 2024, OSTP released the *United States Government Policy for Oversight of Dual Use Research of Concern and Pathogens with Enhanced Pandemic Potential (2024 Policy)*, which was intended to address “oversight of research on biological agents and toxins that, when enhanced, have the potential to pose risks to public health, agriculture, food security, economic security, or national security.” It established an oversight and review process for two categories that previously had been overseen by separate policies: dual-use research of concern (DURC) and research on pathogens with enhanced pandemic potential (also known as “gain-of-function research”). The 2024 Policy was scheduled to take effect on May 6, 2025, and many institutions that receive federal funding had prepared to implement those requirements.

On May 5, 2025, the White House issued E.O. 14292, “Improving the Safety and Security of Biological Research,” which directed OSTP to revise or replace the 2024 Policy within 120 days. The E.O. also directed OSTP to revise or replace the 2024 *Framework for Nucleic Acid Synthesis Screening*, which established requirements for recipients of federal funding for research related to sources of synthetic nucleic acids. As of March 2026, OSTP has not revised or replaced the 2024 Policy or framework.

The 119th Congress may consider several issues related to the safety and security of certain biological research, including the intersection of AI and the biological sciences, as well as emerging areas of research. For example, Congress may consider whether or how the implementation of E.O. 14292 addresses biosafety and biosecurity concerns about certain types of research or whether additional oversight mechanisms or approval processes are needed. The 119th Congress may also consider its current oversight role, including weighing whether certain types of research should be supported with federal investments and, if so, at what level.

For Further Information

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CRS Insight IN12554, *Recent Executive Actions Related to Gain-of-Function Research and Laboratory Biosafety*

CRS Report R47114, *Oversight of Gain-of-Function Research with Pathogens: Issues for Congress*

Regulation of Agricultural Biotechnology

New biotechnology tools, such as gene editing, continue to raise policy questions related to innovation, regulatory oversight, and interagency coordination.

Congress has long played a role in shaping agricultural biotechnology policy, including establishing a national standard for labeling foods that contain bioengineered ingredients. The National Bioengineered Food Disclosure Standard (NBFDS; P.L. 114-216), enacted in 2016, directed the U.S. Department of Agriculture (USDA) to develop regulations requiring disclosure of bioengineered foods. USDA finalized implementing regulations in 2018, with mandatory compliance beginning in January 2022. In 2020, a coalition of retailers and consumer advocacy groups filed suit in a federal district court, challenging the implementing regulations. In 2025, a federal appellate court vacated portions of these regulations. As of March 2026, the scope and timing of revisions depend on district court action and subsequent USDA rulemaking.

USDA also regulates genetically engineered plants under the Plant Protection Act (P.L. 106-224, Title IV, as amended). In 2020, USDA finalized the Sustainable, Ecological, Consistent, Uniform, Responsible, Efficient (SECURE) rule, which exempted certain genetically engineered plants at low risk for pests, and expanded those exemptions in 2024. A federal district court vacated the original rule in December 2024, prompting USDA to revert to the prior regulatory framework and reinstate the “Am I Regulated?” inquiry process. USDA continues to operate under this reverted framework while assessing next steps. Regulatory authority over genetically engineered agricultural animals remains primarily with FDA, though USDA has proposed assuming oversight for certain food-producing animals. USDA and FDA executed a memorandum of understanding in 2021, and in 2024, USDA, FDA, and the Environmental Protection Agency released a plan to update the Coordinated Framework for the Regulation of Biotechnology, including provisions for regular interagency review.

Congress may have renewed questions about regulatory certainty, innovation incentives, and the adequacy of existing statutory authorities. Policymakers may consider whether legislative action is warranted to clarify USDA’s authority over bioengineered and gene-edited products, address regulatory gaps created by litigation, or amend the labeling standards to provide greater specificity regarding disclosure standards, as well as how biotechnology regulation affects competitiveness, commercialization, consumer confidence, and broader bioeconomy goals.

For Further Information

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CRS In Focus IF11573, *USDA’s Regulation of Agricultural Biotechnology*

CRS In Focus IF12618, *Gene-Edited Plants: Regulation and Issues for Congress*

Climate Science

S&T policy considerations permeate deliberations on topics related to climate change and mitigation approaches. This section discusses issues before the 119th Congress, which may include understanding the causes of extreme heat and addressing associated risks, assessing the concept of “net-zero emissions” and other policies.

Climate Change and the Challenge of Addressing Extreme Heat

According to the Intergovernmental Panel on Climate Change (IPCC), human-caused greenhouse gas (GHG) emissions “have unequivocally caused global warming.” Extreme heat is sometimes defined as weather that is much hotter and sometimes more humid than average for a particular location. Studies have examined the influence of human-caused climate change on individual extreme heat events. Some studies have found that human-caused climate change has increased the likelihood or severity of certain extreme heat events in the United States. The IPCC has stated that “it is virtually certain that hot extremes (including heatwaves) have become more frequent and more intense across most land regions since the 1950s” and that there is high confidence that these changes are driven by human-caused climate change.

Extreme heat has a range of consequences. It can affect communities, causing heat-related deaths and an increase in heat-related medical conditions. Extreme heat can affect the health, safety, and productivity of workers. It can strain the electrical power grid and reduce the efficiency of natural gas power plants. Extreme heat may accelerate the degradation of roads, bridges, and railroad tracks and may degrade aircraft performance. In addition, extreme heat may put stress on plants, livestock, and poultry, reducing agricultural yields.

Congress oversees a range of federal activities that can address extreme heat risks and events, directly and indirectly, including the extreme-heat-related observations, forecasting, modeling, and research performed by the National Oceanic and Atmospheric Administration (NOAA). Some Members of the 119th Congress have introduced legislation to address aspects of extreme heat and may continue to show interest in these topics, especially during periods of extreme heat within the communities they represent.

For Further Information

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CRS Report R48579, *Extreme Heat: Background, NOAA’s Role, and Issues for Congress*

Nuclear Energy and Climate Change Mitigation

Congress has long been interested in nuclear energy policy in the context of climate change mitigation. Nuclear energy is among the technologies that could help reduce GHG emissions by providing a low-carbon source of electricity generation to meet existing and future electricity demand.

As a source of low-carbon energy, nuclear power is often weighed against the cost, benefits, and risks of other options to mitigate GHG emissions. These include low-carbon options, such as wind, solar, and other renewables, and measures to improve energy efficiency. Nuclear energy could reduce industrial process GHG emissions (e.g., by producing low-carbon hydrogen as a fuel or feedstock). According to a 2021 National Renewable Energy Laboratory study, life cycle GHG emissions (including those from component manufacturing and site preparation for plant construction) from nuclear power are significantly lower than from fossil fuels and are comparable with those from low-carbon renewables (e.g., wind).

U.S. nuclear power generation has been largely flat for the past 25 years, while natural gas and renewable energy generation have increased. Options for increasing nuclear energy capacity include expanding or uprating existing operational plants, restarting closed plants, building new

conventional nuclear plants, and building new small modular reactors and other advanced design plants.

Nuclear power plant construction often has been subject to large cost overruns and schedule delays, sometimes leading to the abandonment of projects. The potential contribution of nuclear energy to climate change mitigation is dependent on the speed of deployment, which may be affected by cost, licensing, and construction time.

Nuclear energy and the associated fuel cycle entail specific risks not associated with other forms of energy production, including weapons proliferation, safety with respect to release of radioactive material, and other nuclear-specific incidents. The potential benefits of using nuclear energy for emissions mitigation can be assessed against these risks.

For Further Information

Jonathan D. Haskett, Analyst in Environmental Policy

Mark Holt, Specialist in Energy Policy

CRS Report R48480, *Nuclear Energy and Climate Change Mitigation*

CRS Report R42853, *Nuclear Energy: Overview of Congressional Issues*

Earth and Environmental Sciences

R&D conducted by NOAA and other federal agencies may contribute to Earth- and environmental-science-related issues before the 119th Congress, including plastic pollution, improvements to extreme weather forecasting, new techniques in living marine resource (LMR) management, the assessment of seabed deposits for potential critical minerals, and the implementation of technologies proposed to curb illegal, unreported, and unregulated (IUU) fishing.

Addressing Plastic Pollution

Global and domestic plastic production has increased since the mid-20th century—doubling in the last two decades alone. The durability, moldability, and versatility of plastic have led to its ubiquitous use, benefiting many aspects of society, including the food, medical, technology, textile, and transportation industries. As plastic production and use have grown, so have concerns about the effects of plastic on the environment, including increasing rates of plastic waste generation, insufficient management of plastic waste, and pollution from plastic waste. The potential environmental and human health effects of the chemicals used to produce plastics and the air emissions generated across the plastic life cycle have also raised concerns.

The risks from plastic pollution arise from the physical plastic particles (e.g., ingestion and entanglement by wildlife), the potential toxicity of the chemicals from which the plastics are made, and the pollutants that adhere to plastics in the environment. Other environmental impacts include air emissions generated across the plastic life cycle—including during production and for certain post-use disposal practices—which may contribute to climate change and air quality concerns. Gaps remain in understanding the magnitude and scope of these effects and the extent to which various sources of plastic contribute to them. Observers have highlighted the importance of further research to better understand the plastic life cycle, as well as the fate, transport, and effect of plastic pollution in the environment, to inform the adoption of effective policies.

Congress has passed legislation, introduced bills, and held hearings to investigate and address various plastic-pollution-related concerns. The 119th Congress may consider adopting policy options and tools focusing on the entire life cycle of plastic or on specific aspects of that life cycle. Many of these tools could be applied with varying levels of stringency or scope. Congress may also consider its position and options with regard to U.S. involvement in existing international agreements and ongoing negotiations related to plastic pollution.

For Further Information

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CRS Report R48293, *Plastic Pollution and Policy Considerations: Frequently Asked Questions*

CRS In Focus IF10967, *Marine Debris: NOAA's Role*

Improving Extreme Weather Forecasting

Weather- and climate-related disasters affect millions of people in the United States each year and can cost billions of dollars in disaster relief and rebuilding. For example, according to NOAA, in 2024, the United States experienced 27 weather- and climate-related events that each caused more than \$1 billion in losses. In the United States, weather-related information is a result of efforts from academia, the public sector, and the private sector (e.g., commercial weather forecast providers). The public sector includes several federal agencies that engage in weather-related activities or research, have a major need for weather services, or set policy and direction for such services and research.

Congress has indicated its interest in improving aspects of weather forecasting, including passing the Weather Research and Forecasting Innovation Act of 2017 (commonly known as the Weather Act; P.L. 115-25). The act directed NOAA to prioritize weather research and forecasting, subseasonal and seasonal forecasting, weather satellites and data, and federal coordination of weather activities.

Since 2017, various stakeholders and practitioners have recommended additional improvements to the weather enterprise and weather research to better protect U.S. lives and property. Some Members of Congress have shown interest in improving the understanding and prediction of climate and weather-related phenomena since the passing of the Weather Act. The 119th Congress may continue to consider previously introduced policy options, such as improvements to observations and forecasting of specific types of events (e.g., atmospheric rivers), new authorities for weather- and climate-prediction-related activities more broadly at federal agencies, and reauthorizations or changes to activities authorized in the 2017 Weather Act.

For Further Information

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CRS In Focus IF12695, *Tornadoes: Forecasting, Detection, and Communication*

CRS In Focus IF12698, *Weather Act Reauthorization Act of 2025 (H.R. 3816 and H.R. 5089)*

CRS In Focus IF12872, *Atmospheric Rivers: Background and Forecasting*

New Techniques in Living Marine Resource (LMR) Management

DNA methylation refers to a chemical modification of the deoxyribonucleic acid (DNA) chain through the addition of a methyl group (composed of one carbon and three hydrogen atoms). As organisms age, changes in DNA methylation occur (i.e., the amount of methylated DNA increases in certain cells, tissues, and organs). Experts have proposed using methylated DNA as an accurate, novel, nonlethal, and less invasive sampling technique for biological surveys to inform the management of LMRs. Currently, determining the age of LMRs often is performed by examining hard parts (e.g., vertebrae, ear bones, shells) of animals sacrificed during sampling. DNA methylation may allow for greater sampling and aging of protected species, for which lethal sampling approaches are generally undesirable. Congress may consider the utility of technologies such as DNA methylation in biological surveys and assessments to enhance the monitoring of LMRs, including whether federal R&D funding is warranted.

Applications of DNA methylation toward understanding LMRs' life histories could complement federal agency efforts to incorporate molecular techniques into scientific investigations. Beyond biological age, studies find that the amount of methylated DNA in fishes can be used to determine sex, examine environmental influences on size and growth, detect spawning activity, and inform sexual maturity, among other life history factors. DNA methylation also may allow scientists to identify the age and sex of other marine vertebrates. Among its options, Congress may consider whether federal agencies do or should have authorities in law to manage LMRs using these techniques.

For Further Information

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CRS In Focus IF12962, *DNA Methylation: Applications to Living Marine Resource Management*

Seabed Deposits as a Potential Source of Critical Minerals

Demand for critical minerals for economic and national security purposes has driven U.S. interest in bolstering a domestic critical mineral supply. Some stakeholders have proposed seabed mining as one option to strengthen U.S. critical mineral supply chains, because certain minerals, such as cobalt and manganese, are estimated to be more abundant in seafloor deposits than in land deposits. Tension exists between the technological challenge of extracting these resources from remote, deepwater locations and the potential environmental impacts of seabed mining techniques.

On April 24, 2025, as part of a broader national effort to secure reliable supplies for critical minerals, the Trump Administration issued E.O. 14285, "Unleashing America's Offshore Critical Minerals and Resources," making it a policy of the United States to advance U.S. leadership in seabed mineral development as well as deep sea S&T. Commercial-scale seabed mining for critical minerals has not occurred in areas beyond national jurisdiction or on the U.S. outer continental shelf (OCS). In response to E.O. 14285, both NOAA and the Bureau of Ocean Energy

Management (BOEM) have proposed revisions to their respective policies and regulations related to seabed mining. The development of new technologies could enable the successful extraction of minerals and may help to elucidate the relative risks and benefits of commercial-scale seabed mining. For example, new deep-sea sensing technologies may provide information about sediment disturbance and redistribution, among other environmental concerns associated with seabed mining. Seabed mineral collection equipment and machinery could be designed to minimize environmental impacts. The Department of Energy's (DOE's) Advanced Research Projects Agency-Energy (ARPA-E) supports transformational energy technology research projects and has funded several related to seabed mining.

Congress may consider funding levels for certain federal agencies (e.g., ARPA-E) that support R&D related to seabed mining technologies, as well as funding levels for agencies, such as BOEM, NOAA, and the U.S. Geological Survey, that work to identify the locations and characteristics of mineral deposits on the OCS.

For Further Information

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Laura B. Comay, Specialist in Natural Resources Policy

CRS Report R47324, *Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress*

CRS In Focus IF12608, *U.S. Interest in Seabed Mining in Areas Beyond National Jurisdiction: Brief Background and Recent Developments*

CRS Report R48302, *Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress*

Technologies Proposed to Curb Illegal, Unreported, and Unregulated (IUU) Fishing

Earth's vast ocean area enables some fishing fleets to conduct IUU fishing activities undetected, which presents law-enforcement challenges for the United States and other coastal nations aiming to curb these practices. IUU fishing undermines fisheries management because it skews data on fishery populations, inhibits stock assessments, and can exacerbate overfishing. Congress continues to express interest in applying newer technologies to address IUU fishing. Widely used technologies, including the Vessel Monitoring System (VMS) and Automatic Identification System (AIS), monitor vessel location and movement, which can help identify vessels suspected of IUU fishing. Some nations and international organizations require VMS and AIS on fishing vessels of a certain size. SeaVision, developed by the U.S. Department of Transportation and U.S. Navy, uses nonclassified AIS data to display vessel movement as a web-based encrypted sharing network of maritime domain awareness information. The Navy applied machine learning technologies, a subset of AI, to SeaVision to detect anomalous vessel movement behavior (e.g., turning off a VMS, straddling the boundary of a marine protected area). These applications may improve targeted enforcement against vessels suspected of IUU fishing. Some federal agencies also have proposed applying AI to satellite-based synthetic aperture radar data—technology that can penetrate clouds and be used at night—to detect the location and movement of vessels that have turned off their VMSs and/or AISs.

While Congress has given broad authority to several federal agencies to counter IUU fishing domestically and globally, some Members continue to pursue legislative options that would direct federal agencies to provide intelligence, equipment, and funding to partner nations particularly

vulnerable to IUU fishing. Congress may further consider how these resources may be integrated with fisheries management and enforcement approaches to address IUU fishing.

For Further Information

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CRS Report R48215, *Illegal, Unreported, and Unregulated (IUU) Fishing: Frequently Asked Questions*

CRS Report R47859, *Illegal, Unreported, and Unregulated (IUU) Fishing: CRS Experts*

Federal Research Programs

The federal government provides billions of R&D dollars annually to institutions of higher education (IHEs), federal laboratories, and the private sector. This section discusses issues the 119th Congress may consider that are related to federally funded R&D, including indirect costs for federally funded research at universities, recent policies of the National Institutes of Health (NIH) and their potential impact on the research community, S&T cooperation with China, and research security.

Indirect Costs for Federally Funded Research at Universities

The federal government is the largest source of academic R&D funding in the United States, providing funds through more than two dozen federal agencies to U.S. IHEs (i.e., colleges and universities). In 2023, federal funding accounted for \$53 billion of the \$102 billion in R&D performed at IHEs. Federal support for R&D comprises two main types of costs: direct and indirect.

- *Direct costs* are those readily identified with a specific project or program (e.g., salaries and laboratory supplies).
- *Indirect costs* are those that cannot be readily connected to an individual project or program (e.g., utilities, research administration, and library costs) but nevertheless are necessary to conduct research.

Since the 1940s, the allocation of federal funding for direct versus indirect costs has been the subject of debate, and the methods and policies associated with determining federal reimbursement of indirect costs have varied (e.g., full reimbursement, negotiated rates, fixed percentage of direct research costs). As of May 2025, indirect cost reimbursements for IHEs are typically determined by an indirect cost rate that is pre-negotiated with the federal government and varies by IHE, ranging from 30% to 70%. In the first half of 2025, NIH, DOE, NSF, and the Department of Defense (DOD, which is “using a secondary Department of War designation,” under E.O. 14347 dated September 5, 2025) released policies that would impose a 15% indirect cost rate on all R&D awards to IHEs. As of the date of this report, these policies have not been implemented.

At issue for the 119th Congress are the potential consequences of such changes (e.g., federal savings, effects on university R&D infrastructure) and whether, and to what degree, the federal government should support indirect costs. As Congress determines whether to act on indirect costs associated with federally funded R&D at IHEs, it may consider alternative proposals for indirect costs accounting and reimbursement, such as the Financial Accountability in Research (FAIR) model proposed by the academic community.

For Further Information

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CRS Report R48540, *Universities and Indirect Costs for Federally Funded Research*

National Institutes of Health (NIH) Recent Policies and Their Potential Impacts on the Research Community

NIH is the leading federal biomedical and health research agency. With its over \$47 billion budget in FY2025, NIH has been the largest source of federal research funding for U.S. IHEs and the world's largest public funder of health research.

NIH has changed many research and grant policies since January 2025. For example, NIH implemented a new multiyear grant funding policy that, according to CRS analysis, has resulted in part in fewer but larger research awards from January 21, 2025, through September 30, 2025, than during the same time period in recent years. NIH's inflation-adjusted funding level has remained roughly the same over this period. According to the Administration, the new policy increases budget flexibility, though some Members of Congress have expressed concern about increased competition for fewer available NIH grants.

Additionally, in accordance with a presidential memorandum on reducing wasteful spending dated February 18, 2025, NIH has terminated 977 awards valuing \$1.7 billion in obligations. Historically, NIH grant terminations have been rare. NIH also issued a new policy in February 2025 that would limit the amount of indirect costs covered by NIH grants; this policy is currently enjoined (i.e., paused) by the courts. If it were implemented, research institutions could see losses in indirect costs funding, which supports the infrastructure and administrative support for federally funded research. According to NIH, universities regularly accept lower indirect costs funding from private foundations, and federal dollars should support direct research costs rather than "administrative overhead."

Many in the research community have characterized the recent NIH policy changes as disruptive. The Administration has stated that the changes improve government efficiency, create federal cost savings, and realign NIH's research with its priorities. Congress faces choices in deciding whether to reverse any recent policies, to allow them to proceed, or to develop new policies. Congress could also monitor outcomes to determine whether recent policies achieve their intended goals, and determine any benefits or consequences for the scientific research community.

For Further Information

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CRS In Focus IF13131, *NIH Grants Policy Under the Second Trump Administration*

CRS Insight IN12516, *NIH Indirect Costs Policy for Research Grants: Recent Developments*

Oversight of the U.S.-China Science and Technology Cooperation Agreement (STA)

The first major agreement between the United States and the PRC, the U.S.-China STA, has facilitated joint R&D activities between the two nations since it was signed in 1979. At the time,

the STA was part of a U.S. strategy to build ties with China to counter the influence of the Soviet Union. During the 1980s and 1990s, U.S. strategy vis-à-vis China shifted toward enhancing S&T ties as part of a broader U.S. effort to integrate China into the global system and influence its development trajectory and behavior. Since then, U.S. views and strategy have shifted toward protecting and advancing U.S. interests vis-à-vis China as a strategic competitor.

Like other U.S. STAs, the U.S.-China STA is an umbrella agreement. It governs U.S. government S&T work with China through an estimated 30 agency-level protocols and 40 sub-agreements. Stated STA objectives include providing opportunities for cooperation in S&T fields of mutual interest.

The U.S.-China STA is subject to renewal every five years, subject to modification or extension by the parties. As part of the last renewal in December 2024, the STA was amended to add data management and transparency provisions and to narrow its focus to government-to-government collaboration. The renewed agreement does not appear to address some U.S. concerns, such as the PRC's patenting and commercialization of joint research.

The STA is subject to congressional oversight. Such oversight could include (1) reconstituting reporting requirements, (2) requiring the Department of State to notify and provide Congress copies of all current and future sub-agreements, (3) requiring an assessment of U.S. research work with China performed under the STA, and (4) determining whether the U.S.-China STA should be extended at the end of the current five-year term and, if so, according to what terms.

For Further Information

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CRS In Focus IF12510, *U.S.-China Science and Technology Cooperation Agreement*

Securing U.S. R&D from Foreign Threats

In general, U.S. policy for federally funded basic and applied research is to encourage openness, collaboration, and information sharing. U.S. officials and others have raised concerns about various efforts of foreign governments to influence and exploit the openness of the U.S. research ecosystem. They warn that the ability of foreign strategic competitors to acquire U.S. advances in S&T, intellectual property, and talent may pose a risk to U.S. national defense and global economic competitiveness.

Most notably, the PRC has a stated goal of gaining global economic and technology leadership through a range of state-led policies, including directing and funding PRC firms to acquire foreign technology and related capabilities—including basic and applied research and talent—in areas where the United States has strong comparative advantages.

In response, Congress and the executive branch have taken several actions intended to maintain the benefits of an open research ecosystem while protecting it from external threats. For example, in 2019, Congress established an interagency working group to, among other tasks, develop descriptions of known and potential threats to federally funded R&D (P.L. 116-92, §1746). In 2021, President Trump issued National Security Presidential Memorandum 33 (NSPM-33), which directed federal agencies to take specific actions “to strengthen protections of United States Government-supported [R&D] against foreign government interference and exploitation.” And in 2022, the Biden Administration issued guidance to federal agencies on the implementation of NSPM-33.

Together, these actions have amended existing policies and instituted new requirements in a number of areas, including (1) prohibiting certain federally funded researchers from participating in malign foreign talent recruitment programs, (2) establishing research security training and program requirements to increase threat awareness among U.S. academic researchers, (3) standardizing and strengthening requirements for U.S. researchers to disclose specified types of connections to foreign researchers and institutions, and (4) enhancing the ability of federal R&D funding agencies to share information and assess R&D funding decisions for potential security risks.

The 119th Congress may continue to monitor threats to the security of U.S. R&D, oversee the progress of ongoing efforts to address those threats, and consider additional measures that may enhance the ability of the United States to protect the results of federally funded R&D.

For Further Information

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CRS Report R48541, *Federal Research Security Policies: Background and Issues for Congress*

CRS In Focus IF12589, *Research Security Policies: An Overview*

CRS In Focus IF10964, *Made in China 2025 and Industrial Policies: Issues for Congress*

Information Technology (IT) and Social Media

Rapid advancements in IT present several issues for the 119th Congress, such as the need to protect children on the internet, cybersecurity, concerns about lawful access to data as technology evolves, and considerations related to the ownership and use of social media platforms.

Children on the Internet

Since at least the 1990s, policymakers have enacted legislation seeking to protect minors online. For example, the Children’s Online Privacy Protection Act of 1998 (P.L. 105-277, Title XIII) requires operators of websites and online services that are directed to, or knowingly collect personal information from, children under the age of 13 to notify users about the data collection, obtain advance parental consent, and maintain “reasonable procedures” to protect the data.

Some Members of the 119th Congress have introduced bills seeking to protect minors online by creating additional requirements for operators of websites, online services, and online platforms (e.g., H.R. 7757, S. 1748/H.R. 6484, S. 278, H.R. 1623/S. 737). Some of these requirements include preventing minors from accessing certain platforms or content, providing parental tools and safeguards for minors, mandating that minors obtain parental consent, and ensuring that providers conduct age verification. Bills that create requirements specific to minors might incentivize operators to use different age verification methods, such as obtaining a copy of a user’s government identification. Several states have also considered or enacted legislation aimed at protecting minors online. Laws seeking to protect minors in ways that restrict minors’ access to online speech, burden adults’ access, or require operators to change the way they present content can raise First Amendment concerns. Litigation over state laws aimed at protecting minors online is ongoing.

For Further Information

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CRS Report R47884, *Identifying Minors Online*

CRS Legal Sidebar LSB11354, *Supreme Court Upholds State Age-Verification Requirement for Certain Websites*

Cybersecurity of Information and Communications Technology (ICT)

Policymakers may continue developing new cybersecurity reforms during the 119th Congress. One concern many have is the uptick of attacks on key ICT companies and products. According to the National Institute of Standards and Technology (NIST), ICT “encompasses the capture, storage, retrieval, processing, display, representation, presentation, organization, management, security, transfer, and interchange of data and information.” Following are some recent, high-profile ICT cybersecurity incidents:

- the 2020 SolarWinds attack, in which a Russia Federation–linked attacker compromised an IT management company in order to steal data from that company’s clients;
- the 2021 Log4Shell exploitation, in which Islamic Republic of Iran–linked actors took advantage of a common vulnerability in widely used software to access sensitive information on many web servers;
- the 2024 global IT outage, linked to a flawed update of cybersecurity software; and
- the 2024 Salt Typhoon attack, in which PRC attackers compromised telecommunications companies in order to spy on Americans.

The U.S. government has investigated these incidents and, in some cases, has made public claims of attribution and imposed sanctions on malicious actors. The compromises of IT and ICT products are concerning because they violate the chain of trust that users must have in order for these types of products to work and because a compromise of one of these technologies can provide an attacker with broad access to a large number of potential victims.

The 119th Congress may choose to oversee federal agency activities and develop legislation regarding cybersecurity requirements for trusted IT and ICT companies.

For Further Information

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CRS Report R46974, *Cybersecurity: Selected Cyberattacks, 2012-2024*

CRS In Focus IF10559, *Cybersecurity: A Primer*

CRS In Focus IF12798, *Salt Typhoon Hacks of Telecommunications Companies and Federal Response Implications*

CRS Insight IN12392, *The July 19th Global IT Outages*

Evolving Technology and the Debate over “Lawful Access” to Data

Technological advances present both opportunities and challenges for U.S. law enforcement. For example, some observers have expressed concern that law enforcement’s investigative capabilities may be outpaced by the speed of technological change, preventing investigators from accessing certain information they may otherwise be authorized to obtain. Specifically, law enforcement officials cite strong, end-to-end encryption, or *warrant-proof encryption*, as preventing lawful access to certain data. Companies employing such strong encryption have stressed that they do not hold encryption keys. This means they may not be readily able to unlock, or *decrypt*, the devices or communications—even for law enforcement presenting an authorized search warrant or wiretap order.

The tension between law enforcement capabilities and technological change—including sometimes competing pressures for technology companies to provide data to law enforcement as well as to secure customer privacy—has received congressional attention for several decades. For instance, during the 1990s *crypto wars*, proposals to build vulnerabilities, or *back doors*, into certain encrypted communications devices as well as to restrict the export of strong encryption code were introduced. In 1994, Congress passed the Communications Assistance for Law Enforcement Act (CALEA; P.L. 103-414) to help law enforcement agencies maintain their ability to execute authorized electronic surveillance as telecommunications providers turned to digital and wireless technology. More recently, there have been questions about whether CALEA should be amended to apply to a broader range of entities that provide communications services.

The debate over lawful access to information originally focused on law enforcement’s ability to intercept real-time communications. More recent technology advances have affected law enforcement’s capacity to access not only real-time communications but also stored content. Some officials have urged the technology community to develop a means to assist law enforcement in lawfully accessing certain data. At the same time, law enforcement entities have taken their own steps to bolster their technological capabilities. Other stakeholders have urged technology companies to maintain strong encryption to protect privacy. The 119th Congress may consider legislation to address law enforcement’s concerns and customer privacy issues involving access to communications and data.

For Further Information

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CRS In Focus IF11769, *Law Enforcement and Technology: The “Lawful Access” Debate*

Issues Related to Social Media Platforms

Some Members of Congress have expressed interest in various aspects of social media platforms, such as Facebook, Instagram, TikTok, and YouTube. These interests include the spread of misinformation and content that may be harmful, particularly for minors; censorship of lawful content; use of algorithms to amplify or restrict content; and national security, data privacy, and foreign influence risks posed by TikTok, a social media platform owned by the Chinese company ByteDance.

Congress has enacted legislation related to social media platforms. For example, in the 117th Congress, a law was enacted banning TikTok from certain government devices (P.L. 117-328) and directing NSF to support research on the effect of social media platforms on human trafficking (P.L. 117-348). In the 118th Congress, a law was enacted to prohibit app stores and internet hosting services from distributing, maintaining, or updating TikTok and other “foreign adversary

controlled applications” (P.L. 118-50). The 119th Congress passed the TAKE IT DOWN Act (P.L. 119-12), which requires social media platforms and other covered platforms to establish a process for individuals to notify and request the removal of nonconsensual intimate images. Some states have also enacted legislation related to social media. Challenges to the validity of some of these laws are being litigated in federal courts.

Members of the 119th Congress have held hearings and introduced multiple bills on social media platforms (e.g., H.R. 6266, H.R. 6488, S. 626, S. 3292). Some of these bills would amend Section 230 of the Communications Act of 1934, enacted as part of the Telecommunications Act of 1996 (P.L. 104-104). Section 230 protects interactive computer service providers and their users from liability for publishing—and, in some instances, restricting access to or availability of—another user’s content. Other bills would implement requirements for social media platforms.

For Further Information

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CRS Legal Sidebar LSB11316, *Enforcing the Antidiscrimination Mandates of Title VI and Title IX: Executive Agency Options and Procedures*

CRS Report R46662, *Social Media: Content Dissemination and Moderation Practices*

CRS Legal Sidebar LSB11224, *Moody v. NetChoice, LLC: The Supreme Court Addresses Facial Challenges to State Social Media Laws*

CRS In Focus IF12640, *TikTok and China’s Digital Platforms: Issues for Congress*

CRS Legal Sidebar LSB11261, *TikTok Inc. v. Garland: Supreme Court Rejects Challenge to TikTok Divestiture Law*

CRS Legal Sidebar LSB11166, *Montana’s TikTok Ban Goes Before the Ninth Circuit*

CRS Legal Sidebar LSB11266, *Technology Regulation: CRS Legal Products for the 119th Congress*

Innovation and Global Competition

The state of America’s innovation ecosystem—the constellation of people, institutions, and enterprises engaged in R&D of new S&T products and services—affects the long-term economic and national security of the United States. This section discusses issues that may affect the overall capacity of the United States to innovate and compete globally.

Advancing Innovation at DOD

A wide range of authorities, programs, and organizations across the U.S. government support and manage technological aspects of national defense. In particular, such efforts seek to preserve or expand the defense innovation ecosystem—the set of organizations, activities, functions, and processes that develop, produce, and field new or improved technologies and capabilities for military use.

As the U.S. federal government's share of global R&D support fell from 45% in 1960 to about 6% in 2020, some stakeholders have become concerned about the ability of the federal government and DOD, in particular, to direct the development of leading technologies. Today, commercial companies in the United States and elsewhere in the world are leading development of groundbreaking, dual-use technologies in AI, autonomous vehicles and systems, and advanced robotics. DOD's ability to maintain a technology edge for U.S. forces may increasingly depend on these external sources of innovation.

Congress and DOD have taken a number of actions to improve the defense innovation ecosystem, including providing policy direction and establishing new innovation-related positions, organizations, and programs within DOD (e.g., the Defense Innovation Unit and the Office of Strategic Capital). Despite such efforts, many defense experts and other stakeholders remain concerned that DOD is not adopting and transitioning innovative technologies to warfighters at the speed and scale necessary to deter strategic competition from the PRC and to address other threats.

Challenges remain in building the institutional mechanisms and culture within DOD that are needed to effectively access dual-use technologies from private sector companies that have not traditionally served as defense contractors. The 119th Congress may consider several issues, including improved planning, coordination, and execution across DOD components, especially innovation-related organizations; additional reforms to DOD processes (e.g., modifications to DOD's planning, programming, budgeting, and execution process); and efforts to incentivize innovation.

For Further Information

Marcy E. Gallo, Analyst in Science and Technology Policy

CRS In Focus IF12869, *The Defense Innovation Ecosystem*

CRS In Focus IF10834, *Defense Primer: Under Secretary of Defense for Research and Engineering*

CRS In Focus IF10553, *Defense Primer: Research, Development, Test, and Evaluation*

Battery Manufacturing

Although a wide range of chemistry types for batteries are available, the lithium-ion battery became the most widely adopted across a wide range of end uses during the 2010s and 2020s. U.S. manufacturing of these batteries also increased during this time.

Manufacturers in China dominate the U.S. and global supply chain of lithium-ion batteries. Manufacturers in China captured market share partly because of their lower prices compared with global and U.S. competitors and are able to maintain lower prices because of certain industrial practices and policies that commonly occur there.

Investments have occurred in some elements of the domestic battery manufacturing supply chain. The U.S. manufacturing industry for lithium-ion energy storage batteries has largely matured in the downstream processes, such as battery pack assembly. Domestic investment in upstream activities, such as battery cell component manufacturing and active material manufacturing, has not kept pace with investment in further downstream processes. If domestic battery manufacturing continues to be reliant on imports for certain components and materials, then the energy independence and supply chain resilience issues may continue to be areas of concern for some Members of Congress.

Congress might consider a range of policy options that may affect the battery manufacturing industry, including (1) overseeing existing programs, (2) further adjusting the electric vehicle (EV) tax credit (3) adjusting or eliminating the battery and critical mineral production subsidies, (4) introducing job training programs for advanced battery manufacturing, (5) assessing U.S. trade protections, and (6) augmenting supply chain data collection tools. The 119th Congress considered some of these options when it enacted P.L. 119-21, the FY2025 reconciliation law. For example, P.L. 119-21 eliminated the EV tax credit, reduced the scope or duration of certain battery supply chain production tax credits, and placed restrictions on certain foreign entities in the battery supply chain.

For Further Information

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CRS Report R48538, *Advanced Lithium-Ion Energy Storage Battery Manufacturing in the United States*

China's S&T and Industrial Policies

China aims to gain a global economic and technology leadership position through a range of state-led industrial and related S&T policies. These policies feature a heavy government role in directing and funding PRC firms to acquire foreign technology and related capabilities—including basic and applied research and talent—including in areas where the United States has long been a global leader and has strong comparative advantages. Some Members of Congress have expressed concern that China's policies, if successful, could undermine U.S. technological leadership; further shift advanced technology, production, and research to China; and support a wide range of China's technological advancements, including in defense. The scope and scale of China's efforts are evident in the amount of state direction and support devoted to these efforts; China's policies to promote its leadership across the entire value chain (rather than just segments of it) in key advanced and emerging technologies; and the tactics China uses to target and acquire U.S. and allied capabilities.

PRC national plans and policies call for advancing China's technological and scientific self-reliance and support the development of a range of strategic and emerging technology sectors, such as semiconductors, biotechnology, quantum computing, and AI. China's industrial policies, including *Made in China 2025* (MIC2025), seek to boost PRC competitiveness by advancing China's position in global R&D and technology and manufacturing value chains. China's 14th Five-Year Plan for national economic development (2021-2025) calls for strengthening China's capabilities in basic research and for expanding the use of antitrust, intellectual property, and technical standards tools to set market terms and promote PRC firms in emerging technologies. In March 2026, the PRC government released its 15th Five-Year Plan for 2026-2030.

Concerns about PRC industrial policies raised by U.S. officials and executives since the 1990s have broadened into a U.S. government focus on strategic competition with China. The executive branch and Congress have debated and adopted some approaches to counter PRC practices that challenge U.S. S&T and economic leadership, distort markets, and hinder fair market competition. The 119th Congress may deliberate (1) the efficacy of U.S. policies to date (in design and in practice) in countering China's industrial policies; (2) whether a growing state role in PRC companies calls for treating PRC firms differently; and (3) how U.S.-PRC trade, investment, technology, and research ties affect U.S. competitiveness and options to counter PRC policies.

For Further Information

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CRS In Focus IF10964, *Made in China 2025 and Industrial Policies: Issues for Congress*

CRS In Focus IF12473, *U.S.-China Competition in Emerging Technologies: LiDAR*

CRS In Focus IF11667, *China's Economy: Current Trends and Issues*

Issues for the Implementation of Regional Innovation Strategies (RISs)

Federal assistance for RISs is generally intended to help state and local stakeholders develop links between organizations so they may expand innovation, increase jobs, attract investment, and otherwise support regional economic development goals. As place-based initiatives, RIS programs, such as the Small Business Administration's Regional Innovation Clusters program, generally focus on addressing conditions in a specific location. Some RIS programs also seek to improve the development and commercialization of key technology focus areas and support U.S. innovation capacity broadly. In recent years, Congress authorized new programs and provided initial funding for certain RIS programs, including the Economic Development Administration's Regional Technology and Innovation Hubs (Tech Hubs) and NSF's Regional Innovation Engines programs.

The 119th Congress may consider appropriations for both new and existing RIS programs. Appropriations and other funding for the Tech Hubs program from FY2023 to FY2026, for instance, totaled \$1.1 billion—an amount that is approximately 11% of the funding authorized to be appropriated for the FY2023-FY2027 period. If additional funding is provided, Congress may opt to provide instructions for how individual agencies allocate it (e.g., expanding the geographic diversity of awards, funding new and/or existing awardees) and whether or how various agencies coordinate awards and select the technology focus areas.

Congress may also seek to evaluate initial outcomes and review implementation milestones. Implementation issues that may impact RIS programs in the 119th Congress center on aspects of sustainability, including the availability of federal and nonfederal funding and the availability of training resources for workers as regional innovation systems develop. Outside groups suggest that while federal funding may serve as an initial catalyst, additional contributions from state and private sector partners may be important for sustaining the growth of regional ecosystems.

For Further Information

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Adam G. Levin, Analyst in Economic Development Policy

CRS In Focus IF12793, *Federal Assistance for State and Local Entrepreneurship Development Policies and Recent Legislation*

CRS In Focus IF12794, *The Role of Business Incubators and Accelerators in Entrepreneurship Support*

The Role of Immigration in the U.S. S&T Workforce

Congress has a long-standing interest in how immigration contributes to U.S. economic growth and technological innovation through the employment of foreign workers in S&T occupations. The Immigration and Nationality Act (INA; part of Title 8 of the *U.S. Code*) contains provisions

permitting skilled foreign workers (i.e., having at least a four-year bachelor's degree) to immigrate temporarily or permanently to the United States.

The INA limits the number of immigrants who receive lawful permanent resident status (i.e., green cards) for skilled and other types of employment to 140,000 people annually. The INA also allows for several categories of skilled temporary nonimmigrants to be admitted to the United States for a specific purpose and a limited period. These include the H-1B visa for specialty occupation workers and the L-1 visa for intracompany transferees. Many of these workers are employed in S&T occupations. In addition, foreign students on F-1 visas may obtain authorization to work for one year (or up to three years for STEM majors) in fields related to their degree through optional practical training (OPT), which is not numerically limited. Nonimmigrant workers are often sponsored by their U.S. employers for employment-based green cards.

The annual statutory numerical limits for permanent, employment-based immigrants have not changed since 1990. In contrast, the annual number of foreign workers receiving H-1B visas, L-1 visas, and OPT—the latter two of which are not subject to statutory caps—has increased substantially. Observers favoring increased permanent, employment-based immigration contend that current limits are outdated. They note that U.S. gross domestic product has doubled since the INA was last amended in 1990, technological innovation and competition with other countries have expanded enormously, and labor market growth in recent decades has relied primarily on immigration. Other observers favoring stable or lower immigration levels contend that the increasing use of nonimmigrant temporary worker categories by U.S. employers subverts the permanent, employment-based immigration limits established by Congress and harms the wages, working conditions, and opportunities of U.S. workers and students.

Considerations for Congress include whether to revise the number of foreign workers admitted to the United States; alter the criteria by which the United States admits foreign workers by, for example, putting greater emphasis on labor market contribution; decentralize immigrant selection through place-based systems that allow states and jurisdictions to sponsor foreign workers on the basis of local labor needs; require employers to pay higher wages to foreign workers and/or expend greater effort recruiting U.S. workers; or regularly adjust immigration levels on the basis of national needs.

For Further Information

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The Role of Patents in Promoting Innovation

The U.S. patent system is designed to encourage innovation and economic growth by offering a limited-time monopoly on an invention in exchange for its public disclosure. Areas of patent policy that the 119th Congress may choose to address include patent-eligible subject matter and the Patent Trial and Appeal Board (PTAB).

Patent-eligible subject matter refers to the types of inventions that may be patented. Stakeholders have debated possible uncertainty in patent eligibility on incentives for innovation, especially in industries such as biotechnology, AI, and computer software. The U.S. Patent and Trademark Office (USPTO) issued guidance in 2019 and 2024 to clarify how its patent examiners should apply subject-matter eligibility standards. Bills introduced in the 119th Congress (e.g., H.R. 3152/S. 1546, H.R. 5811) would broaden the scope of patent-eligible inventions.

In 2011, Congress created PTAB, an administrative body within USPTO, to adjudicate challenges to the validity of granted patents. PTAB proceedings, such as inter partes review (IPR), generally provide a faster and less expensive forum to challenge the validity of issued patents compared with litigation in federal court. While some stakeholders argue that PTAB offers an efficient means to invalidate low-quality patents, others contend that its proceedings are unfair to patent holders and undermine certainty in patent rights. Beginning with a March 2025 memorandum, USPTO leadership has taken actions that have significantly restricted the availability of IPR by, for example, expanding the circumstances in which USPTO will exercise its discretion to decline to institute (i.e., begin) an IPR proceeding. In October 2025, USPTO also issued a notice of proposed rulemaking that would generally limit the availability of IPR when the patent’s validity is (or has been) challenged in federal court or other forums.

Bills introduced in the 119th Congress would reform PTAB proceedings in various ways (e.g., H.R. 3160/S. 1553) or abolish PTAB (H.R. 5811).

Patents play a particularly important role in innovation within the pharmaceutical industry. Ongoing debates in this area concern how to balance promoting the development of new pharmaceuticals with ensuring patient access to affordable drug treatments. While some stakeholders argue that robust patent rights are necessary to support R&D for new drugs, others argue that strategic uses of patents can unduly delay or deter competition and contribute to high drug prices. A number of bills introduced in the 119th Congress seek to promote competition from generic or biosimilar drugs by limiting alleged pharmaceutical patenting practices known as “product hopping,” “patent thickets,” or “pay-for-delay settlements” (e.g., H.R. 3269/S. 2276, S. 1040, S. 1096).

For Further Information

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CRS In Focus IF12644, *Patent Listing in FDA’s Orange Book*

CRS In Focus IF12700, *“Skinny Labels” for Generic Drugs Under Hatch-Waxman*

U.S. Efforts to Promote and Protect Competitiveness in Semiconductors

Semiconductors are strategic and uniquely important electronic devices. They are fundamental to many economic, industrial, and national security activities and serve as essential building blocks

of other technologies, such as AI. Since 2021, Congress has enacted legislation in response to its concerns that the United States lacked critical domestic semiconductor production capabilities and, more broadly, was losing its competitive edge in the global semiconductor industry. The 119th Congress continues to oversee the implementation of the CHIPS and Science Act (P.L. 117-167), which provides funding for domestic production of semiconductors, companies in the semiconductor supply chain, and federal semiconductor R&D activities.

Some Members have focused on terms imposed under CHIPS Act grants since 2025 that give the federal government an equity stake in certain U.S. semiconductor firms. Other areas of congressional interest include provisions in U.S. trade negotiations with countries such as Japan and South Korea for foreign investment in the U.S. semiconductor sector, other countries' semiconductor policies and practices and issues of U.S. competitiveness, the role of Taiwan in global semiconductor supply chains, and U.S. export controls with regard to advanced semiconductors (and related software, tools, and equipment) and the U.S. licensing of advanced chips for export to the PRC.

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CRS Infographic IG10073, *Taiwan's Role in Global Semiconductor Supply Chains*

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Space Policy

Congress has historically had a strong interest in space policy issues. Space topics that may come before the 119th Congress include the funding and oversight of the National Aeronautics and Space Administration (NASA) and issues related to the commercialization of space.

Commercial Space Issues

The U.S. commercial space industry offers a range of services to private and government customers. A majority of U.S. satellites are now commercially owned, providing commercial services, and launched by commercial launch providers. Congressional and public interest in space is becoming more focused on commercial activities, such as companies flying private individuals into space or the potential private extraction of space resources.

Multiple federal agencies regulate the commercial space industry on the basis of statutory authorities that were enacted separately and have evolved over time. The Federal Aviation Administration (FAA) licenses commercial launch and reentry vehicles as well as commercial spaceports. NOAA licenses commercial Earth remote sensing satellites. The Federal Communications Commission (FCC) licenses commercial satellite communications. The Departments of Commerce and State license exports of space technology. In the past few years, several of these agencies have made changes in their regulations affecting commercial space, and federal agencies may continue to revise their regulations or conduct additional regulatory action on topics such as orbital debris. In addition to its continued oversight of these agencies, the 119th Congress may also consider legislation to amend existing regulatory authorities or to address activities not covered by current licensing regimes. More broadly, the 119th Congress may continue its oversight of existing regulatory authorities for commercial space activities.

Federal agencies are customers of the commercial space industry. NASA procures commercial launch services to deliver crew and cargo into orbit. DOD has similar programs, such as the National Security Space Launch program, through which the agency procures launch services to deploy military and intelligence community satellites. NASA, DOD, and other federal agencies such as NOAA also procure weather and remote sensing data from commercial satellites. The 119th Congress may address these developments through oversight of agency programs and decisions on agency budgets.

For Further Information

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CRS Report R48582, *Commercial Space Launch and Reentry Regulations: Overview and Select Issues*

CRS In Focus IF12900, *Defense Primer: National Security Space Launch Program*

Telecommunications

Telecommunications technologies present several issues for the 119th Congress, including those related to over-the-air radio broadcast transmissions (such as access to transmissions and the impact of broadcasting technologies on copyright), broadband programs, copyright law and broadcasting policies, policies governing federal and nonfederal radio spectrum management and use, the security and resiliency of telecommunication networks, and Universal Service Fund (USF) Reform.

AM Broadcast Radio in Motor Vehicles

More than 4,000 U.S. broadcast radio stations use amplitude modulation (AM) frequencies to transmit audio programs to listeners. AM radio also supports national and local emergency alerting systems. Since 2014, several motor vehicle manufacturers have opted not to include broadcast AM radio in EVs.

The FCC has statutory jurisdiction over electronic equipment that can interfere with broadcast reception. In 1980, the agency chose to exempt motor vehicle equipment from its licensing requirements, stating that including it would require further study. The exemption remains in place. The U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) establishes safety standards for, but does not preapprove, electronic equipment in vehicles.

Several EV manufacturers assert that their vehicle models' electronic equipment interferes with the reception of AM broadcast signals, thereby obstructing the consumer benefits of AM broadcast receivers. Broadcasters and seven former administrators of the Federal Emergency Management Agency state that the lack of access to AM radio could impede the ability of drivers and passengers to receive national and local emergency alerts. AM radio stations serve two roles during emergency alerts: (1) they are initial points of contact for presidential and nonpresidential emergency alerts in the broadcast-based transmission system regulated by the FCC, and (2) they provide one of several technology-based communications pathways for nonpresidential emergency alerts. Other pathways include communication by satellite transmissions and wireless transmission using cellular technology.

If the 119th Congress chooses to address the issue of the availability of AM radio in motor vehicles, it may consider one or more options, some of which are included in S. 315, the AM

Radio for Every Vehicle Act of 2025, as introduced, and H.R. 979, a bill “to require the Secretary of Transportation to issue a rule requiring access to AM broadcast stations in motor vehicles, and for other purposes.” Among other provisions, S. 315 would (1) increase the Department of Transportation’s jurisdiction over motor vehicle equipment for a 10-year period and (2) direct a study examining the role of and alternatives to AM radio in the transmission of national and emergency alerts. Additional options include (1) increasing the FCC’s jurisdiction over motor vehicle equipment to reduce the risk of interference with broadcast radio stations and (2) monitoring industry developments while conducting oversight.

For Further Information

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CRS Report R48315, *AM Broadcast Radio in Motor Vehicles*

Broadband Programs and Technologies

Broadband service is delivered through wired and wireless technologies and allows users to send and receive data that support a range of applications. While broadband deployment continues to progress, some communities lack broadband service. The gap between those who have access to broadband and those who do not is sometimes termed the “digital divide.” As economics often factor into where providers decide to deploy, federal subsidies may encourage investment in broadband deployment for unserved areas. Multiple federal programs provide funding support for broadband deployment.

The Broadband Equity, Access, and Deployment (BEAD) Program, established under the Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58), is the largest federal broadband grant program in terms of funding. This program is administered by the National Telecommunications and Information Administration (NTIA), an agency in the Department of Commerce, and provides \$42.45 billion to states and territories, aiming to connect every American to broadband. On June 6, 2025, NTIA issued the BEAD Restructuring Policy Notice to modify and replace certain requirements for the program, with the stated purposes of realigning the program with statutory intent, accelerating broadband deployment, and moving the program forward expeditiously. Policymakers and stakeholders have expressed varying opinions regarding this policy notice and subsequent changes made to the BEAD Program by NTIA in 2025.

The BEAD Program is the first instance in which low Earth orbit (LEO) satellite providers are eligible to receive federal funding to help close the digital divide. Currently, there is debate among Congress, federal agencies, and other stakeholders about whether broadband delivered by LEO satellite is a viable alternative in locations where wired technologies—such as fiber—are not available. Some policymakers are seeking to expand the role of LEO satellites in other federal broadband programs, while others may seek to wait and see the effect LEO satellites have on the digital divide through the BEAD Program.

The 119th Congress may consider these issues as it continues to address the digital divide.

For Further Information

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CRS Video WVB00835, *Broadband Equity, Access, and Deployment*

Copyright Laws and Broadcasting Policies

A copyright grants the authors of a creative work certain exclusive rights in their creation. The scope of copyright in music depends on the type of work at issue and the particular use that is made of the work, including the type of technology that is used to disseminate a work. U.S. law has explicitly recognized copyright in *musical works* (i.e., the compositions) and the public performance of those works, but current copyright protections for *sound recordings* (i.e., the recorded performances of a piece of music by musicians and singers) are more limited.

Sound recordings have a limited exclusive right of public performance that applies only to digital audio transmissions. Because over-the-air transmission by broadcast radio stations falls outside the definition of “digital audio transmission,” radio stations do not need to pay royalties to the performers, record labels, or other owners of the sound-recording copyright. Though radio stations are not required to pay public performance royalties for over-the-air transmissions of a sound recording, they are required to pay for the right to transmit sound recordings via digital streaming platforms.

Those who support extending public performance rights to over-the-air broadcasts contend that doing so would create legal parity with streaming and other digital services, such as SiriusXM. Two pieces of legislation introduced in the 119th Congress focus on public performance rights for sound recordings transmitted by broadcast radio. The first, a nonbinding resolution known as the Supporting the Local Radio Freedom Act (H.Con.Res. 12 and S.Con.Res. 8), would effectively declare support for maintaining the status quo. The second, the American Music Fairness Act of 2025 (H.R. 861) and the American Music Fairness Act (S. 326), would subject performances by radio stations to the statutory license applicable to noninteractive digital services and place caps on royalties for broadcast stations with annual revenue under \$1.5 million in the preceding year (unless owned by an entity with annual revenue over \$10 million).

For Further Information

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CRS Report R47642, *On the Radio: Public Performance Rights in Sound Recordings*

Radio Spectrum Policy

Radio spectrum (“spectrum”) is the continuum of frequencies allocated for radio transmissions. Private entities use spectrum to provide commercial services; government agencies use spectrum to carry out their missions. Access to spectrum is in high demand among companies seeking to provide wireless services, such as radio broadcasting, mobile communications, and satellite services, and is regulated by the U.S. government to enable access for all users and to avoid interference between users.

The FCC manages nonfederal use of radio frequencies in the United States, granting licenses to entities to use specific radio frequencies for certain purposes and setting terms and conditions of use. NTIA manages federal spectrum use, assigns frequencies to federal agencies, presents the executive branch’s views on spectrum policy to the FCC and Congress, and coordinates with the FCC to manage the nation’s spectrum. As new technologies often spur economic growth, Congress has continued to pursue policies that make spectrum available for emerging technologies while also ensuring that agencies, including military and public safety agencies, have the spectrum they need to carry out their missions.

P.L. 119-21 reinstated the FCC’s spectrum auction authority through September 30, 2034. The act also directs the FCC to make 300 megahertz of spectrum available for commercial wireless use and NTIA to identify 500 megahertz of spectrum for reallocation from federal to commercial use. The FCC and NTIA may face challenges in identifying and reallocating 800 megahertz of spectrum for commercial licensed use in the spectrum range and timelines specified in the act. Congress may seek to monitor agencies’ progress in identifying spectrum for reallocation; bands selected for reallocation; impact of reallocation on incumbent users, including federal agency users performing critical functions; auction proceeds and timelines to ensure budgetary targets are met; and costs of reallocation that can diminish auction proceeds. Other areas of interest for Congress related to spectrum management include improving interagency coordination processes, facilitating the implementation of the National Spectrum Strategy, and investing in spectrum sharing research and development to increase spectrum efficiency and availability.

For Further Information

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Resiliency of Telecommunications Networks for Public Safety

Congress takes interest in ensuring telecommunications networks are reliable during outages (e.g., natural disasters), as disruptions in communications can affect public safety. While telecommunications networks are considered critical infrastructure and are typically privately owned, operated, and secured by the owner, Congress has taken action to support the resiliency of some networks.

Congress oversees the FCC, which regulates commercial communication services and providers, monitors commercial networks, and provides government officials and the public with information during and after natural disasters. For example, when Hurricane Helene made landfall near Perry, Florida, disrupting cellular communications across parts of the southeastern United States, the FCC activated its Disaster Information Reporting System to collect cellular network outage reporting data from providers, which it then aggregated, anonymized, and presented in public reports.

The advent of LEO satellites for broadband service may provide expanded coverage during outages. During communications disruptions, some providers of LEO service have provided backup connectivity to affected communities during the restoration of terrestrial telecommunications services (see “Broadband Programs and Technologies”). Further, satellite direct-to-device (D2D) capabilities—which provide connectivity directly to a smartphone from a satellite—could assist with providing service during cellular outages, including the transmission of emergency alerts.

The 119th Congress may continue to examine the effectiveness of federal government and commercial efforts to ensure continuity of service, including through the use of LEO satellites and D2D and federal roles for improving communication network resiliency.

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Security of U.S. Telecommunications Networks and Devices

Congress has a long-standing interest in ensuring security of U.S. telecommunications networks and devices, and the communications they carry.

The John S. McCain National Defense Authorization Act for Fiscal Year 2019 (P.L. 115-232) restricted purchase and use of network equipment from five firms based in the PRC. The Secure and Trusted Communications Networks Act of 2019 (P.L. 116-124) directed the FCC to maintain a covered list of equipment determined by an appropriate national security agency to pose a threat to U.S. security and established the Secure and Trusted Communications Networks Reimbursement Program to reimburse small wireless providers for replacements of covered equipment from their networks. Some of these reimbursement projects are complete; the remainder have a May 8, 2026, deadline for completion.

The Servicemember Quality of Life Improvement and National Defense Authorization Act for Fiscal Year 2025 (P.L. 118-159) directed a national security agency to evaluate unmanned aircraft systems (UAS), or drones, manufactured by PRC-based Da-Jiang Innovations (DJI), to determine whether the equipment should be placed on the FCC's covered list. In December 2025, after an interagency body determined that foreign-made drones pose a threat to U.S. national security, the FCC placed foreign-made drones on the covered list. This meant that no new foreign-made drones would be authorized by the FCC; without authorization, these drones cannot be imported, marketed, sold, or used in the United States. The FCC stated that operators using previously authorized foreign-made drones could continue to use foreign-made drones, including DJI drones. On January 7, 2026, DOD determined that certain UAS and UAS critical components do not pose a threat and should be removed from the FCC's covered list until January 1, 2027; the exceptions did not include DJI.

Congress may continue to identify specific equipment that poses a U.S. national security or economic threat, direct national security agencies to evaluate risks from certain equipment, and require the FCC to place equipment on the covered list. Balancing the national security threats and the needs of industry to procure equipment and component parts that are both secure and profitable may be a challenge.

For Further Information

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Universal Service Fund (USF) Reform

The FCC has established four USF programs: the High Cost Program, the Lifeline Program, the Rural Health Care Program, and the Schools and Libraries Program. The USF is intended to ensure that all Americans have access to telecommunications services at just, reasonable, and affordable rates. Some Members have proposed reexamining the USF and the fees it charges carriers (which may be passed on to consumers) and evaluating the appropriateness of FCC authorities. For example, the 118th Congress considered expanding the contribution base by amending the types of entities that contribute to the fund, directing spectrum auction revenues to support the USF, and funding the USF through the appropriations process.

Stakeholder groups have identified a range of opportunities for change in the USF, such as modernizing the USF funding mechanism, prioritizing affordability and equity, addressing the digital divide, ensuring program stability, and improving accountability and oversight. Some Members have called on Congress to reexamine the USF as a “hidden tax” placed on carriers, to limit FCC authorities, and to increase congressional oversight of USF spending. Congress may consider these discussion points if it considers legislation to reform the USF.

For Further Information

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