



Summary of CHIPS Act of 2022

Senator Kelly was [one of the chief negotiators](#) of the bipartisan agreement to provide \$52 billion to support the domestic semiconductor industry, and served on the [bicameral conference committee](#) which brokered a bipartisan agreement to support the domestic semiconductor industry, enhance American competitiveness in China, and reinvigorate U.S. efforts to lead the world in research, development, and innovation.

The bipartisan compromise agreement, now called the CHIPS Act of 2022, is the byproduct of months of bipartisan work by Kelly, and his colleagues on both sides of the aisle, which will establish Arizona as a global hub for microelectronics research, development, testing, manufacturing, and packaging. Senator Kelly is the lead negotiator of the [\\$52 billion investment in semiconductor manufacturing](#), the original cosponsor of the [U.S. Innovation and Competition Act](#), and a key cosponsor and champion of the [FABS Act](#). These three pieces of legislation form the backbone of the CHIPS Act of 2022.

The CHIPS Act of 2022 includes:

- \$52 billion to build, expand, or modernize facilities in the United States for semiconductor fabrication, assembly, testing, advanced packaging, and related tools and equipment, and dedicated funding for the first-ever National Semiconductor Technology Center, the National Advanced Packaging Manufacturing Program, and a National Network of Microelectronics Research and Development.
- A [four-year](#) 25 percent investment tax credit, based on Kelly's FABS Act, which will provide stable and long-term incentives to help semiconductor manufacturers

and suppliers construct manufacturing facilities in the United States. Companies that receive the funding are prohibited from conducting stock buybacks or building factories in China.

- \$1.5 billion for the Public Wireless Supply Chain Innovation Fund, which would help U.S. companies produce “leap-ahead” telecommunications technologies to out-innovate Chinese state-owned companies, like Huawei, when developing beyond 5G telecommunications technologies.
- \$20 billion for a first-of-its-kind National Science Foundation Directorate for Technology, Innovation, and Partnerships which will accelerate R&D in sectors of national and economic-security critical technologies, like artificial intelligence, quantum computing, hypersonics, and 6G innovation.
- \$13 billion for STEM education programs, including scholarships, fellowships, and traineeships to help train the next generation of students in fast-growing STEM fields.
- \$10 billion for geographically distributed Regional Technology Hubs, which will allow regions of the United States to focus on industry-specific technology development, job creation, and innovation.
- \$50 billion for the Department of Energy’s National Laboratories and Office of Science programs, to maintain American leadership in world-leading scientific research and research facilities.
- A requirement that NASA return to the Moon as a part of the Artemis exploration missions, maintain U.S. leadership on the International Space Station, carry out critical exploration missions led by Arizona universities, and invest in additional STEM education programming.

See below for how Senator Kelly delivered for Arizona in the CHIPS Act of 2022:

The following pieces of legislation, sponsored or cosponsored by Senator Kelly, are included in the CHIPS Act of 2022:

- Kelly's [Microelectronics Research for Energy Innovation Act](#), which Kelly introduced with Senator Blackburn to establish the first-ever dedicated program at the Department of Energy for advanced semiconductor and microelectronics research.
- Kelly's [Strengthening STEM Ecosystems Act](#), which Kelly introduced with Senator Moran to provide dedicated funding for community-based STEM Ecosystems that seek to bring business, education, and community organizations together to collectively inspire and engage millions in STEM education and job training.
- Kelly's [Investing in Domestic Semiconductor Manufacturing Act](#), which ensures that federal incentives to boost domestic semiconductor manufacturing include U.S. suppliers that produce the materials and manufacturing equipment that enable semiconductor manufacturing.
- Kelly's [Advancing Human Spaceflight Act](#), which extends NASA's ability to utilize the International Space Station through 2030, and authorizes the Artemis missions, which will return Americans to the Moon.
- Kelly's [Endless Frontiers Act](#), which establishes a new directorate at the National Science Foundation to advance research of technologies critical to economic and national security, and establishes a Regional Technology Hub program, to support local efforts to build technical expertise within industries and communities.

Supporting the Domestic Microchip Industry – As a former Navy fighter pilot and Astronaut, Kelly understands the unique risks to our national and economic security if the United States is not able to regain dominance in the production of microchips. While the United States once represented nearly 40 percent of global chip production, today the U.S. manufactures just 12 percent of global semiconductors, with more than 80 percent of microchips made in southeast Asia. To reverse these trends, Kelly worked for more than a year to secure the following priorities in the CHIPS Act of 2022:

- \$39 billion for the CHIPS for America Fund, which provides direct financial assistance in the form of grants or loans to microchip manufacturers, as well as tooling, equipment, packaging companies and their suppliers that are looking to open manufacturing facilities in the United States. Companies who wish to receive this assistance, must:
 - Be taking meaningful steps toward developing a new or expanded manufacturing facility in the United States, and have received financial incentives from local or state economic development agencies;
 - Partner with local high schools, community colleges, and universities to support workforce development opportunities;
 - Refrain from making any investments of leading-edge capabilities in the People’s Republic of China, the Russian Federation, or other foreign adversaries.

- \$11 billion for research and development initiatives to ensure long-term U.S. leadership in the microchip industry, with dedicated funding provided for the establishment of a National Semiconductor Technology Center, a National Advanced Packaging Manufacturing Program, a Manufacturing USA Institute focused on microchips, and funding for basic research at the National Institute for Standards and Technology.

- \$2 billion for a National Network for Microelectronics Research and Development, which will allow the Department of Defense to establish a network

of university-based prototyping and testing facilities that enables researchers to fully complete the lab-to-fab transition of semiconductor technologies—including DoD-unique applications—within the United States. [Senator Kelly has championed the creation of this program](#), which would ensure that the United States has state of the art, at-scale testing facilities that are accessible to researchers. Currently, [these capabilities only exist in Europe or China](#), presenting a significant threat to national security. This funding will enable Arizona State University to move forward with [plans bring this facility to Arizona](#).

- The FABS Act, which creates a 4-year, 25 percent investment tax [credit](#) for investments in semiconductor manufacturing and includes incentives for the manufacturing of semiconductors, as well as for the manufacturing of the specialized tooling equipment required in the semiconductor manufacturing process. Kelly is a cosponsor and champion of the [FABS Act](#), which has the potential to supercharge already-planned investments in Arizona.
- The Investing in Domestic Semiconductor Manufacturing Act, which was introduced by Kelly, would ensure that funding from the CHIPS for America Fund can be used not just by the manufacturers of semiconductors, but also to support the upstream suppliers, essential to building strong domestic semiconductor manufacturing ecosystems, and advanced packaging and finishing companies, who assemble and distribute finished microchips.
- The Microelectronics for Research Innovation Act, which was introduced by Kelly, would establish a new research program within the Department of Energy (DOE) and at DOE national labs to support discoveries of new and advanced tooling, new manufacturing processes, and new materials to be used to make microchips that are faster and smaller. This leading-edge research is critical to maintaining long-term U.S. dominance in the microelectronics industry.

Fixing Our Broken Supply Chains - Arizonans are facing rising costs at the grocery store and the gas pump. As an original cosponsor of the U.S. Innovation and Competition Act, Kelly secured critical wins within the CHIPS Act of 2022 that will address supply chain bottlenecks, and lower costs for Arizonans, including:

- Establishing a **National Supply Chain Database**, to assist small businesses and manufacturers in finding suppliers and contractors, which will help identify shortfalls in critical manufacturing and production capacity throughout the country, and help innovative businesses quickly fill supply chain shortfalls.
- Establishes a **Foundation for Energy Security and Innovation** within the Department of Energy to engage with the private sector to raise funds that support the creation, development, and commercialization of innovative technologies that address energy challenges, including rising costs for fuel and electricity.
- Expanding the authorities and funding the **Manufacturing Extension Partnership** and the **Manufacturing USA Institutes**, to better enable these community-based programs to support small and mid-sized manufacturers who are producing critical products and technologies within the United States.

Workforce and STEM Education – As a product of public education, Kelly understands the value that education can provide to help students get the skills they need for great-paying jobs. As a lead negotiator on the bicameral conference committee on the America COMPETES Act, Kelly secured the following priorities in the CHIPS Act of 2022 to support STEM education programs:

- Requiring the National Science Foundation to establish **Centers for Transformative Education Research and Translation** to advance research, development, and implementation of innovative and interdisciplinary programs to engage K-12 students in STEM education fields. STEM Ecosystems, which are consortia of universities, non-profits, and STEM companies, are eligible for the

program. The Arizona Technology Council has established an [Arizona STEM Ecosystem comprised of more than 900 partners](#), and Kelly championed the inclusion of the STEM Ecosystem program through his [Strengthening STEM Ecosystems Act](#).

- Creates a **national network for microelectronics education** at the National Science Foundation, aimed at training an additional 90,000 workers by 2025 to ensure a robust workforce for the domestic microelectronics industry. Kelly secured a \$200 million appropriation through the **CHIPS for America Workforce and Education Fund** to support these efforts.
- \$20 million for the National Science Foundation to establish a Rural STEM Education program, which provides funding to increase access to STEM education opportunities in rural schools and to provide teachers with the resources they need to teach more effectively.
- \$13 billion for the National Science Foundation to establish scholarships, fellowships, and traineeships to support students and researchers preparing for jobs in critical fields, including establishing an artificial intelligence scholarship-for-service program and cybersecurity workforce development programs.
- Creates new initiatives across federal research institutions to support STEM engagement and improve the diversity of researchers in the United States, including establishing a position of Chief Diversity Officer at the National Science Foundation, authorizing the Office of STEM Education at NASA, and expanding the mission of Department of Energy National Labs to include engagement and outreach to K-12 and undergraduate students pursuing careers in STEM fields.

Supporting Regional Economic Development – After traveling to all 15 counties in Arizona, Kelly understands the need to ensure that growth doesn't just benefit big cities, and that all regions of Arizona can participate in the innovation economy. As a lead negotiator on the bicameral conference committee on the America COMPETES Act, Kelly secured the following priorities in the CHIPS Act of 2022 to support regional economic development:

- \$10 billion for the establishment of a new Regional Technology Hub program within the Department of Commerce to create 20 geographically distributed “regional technology hubs” focused on technology development, job creation, and expanding U.S. innovation capacity. A centerpiece of Kelly’s [Endless Frontiers Act](#), the Regional Technology Hub has the potential to transform economic development in Arizona, and Kelly [has long advocated for the program](#).
- \$1 billion for the establishment of a RECOMPETE Pilot Program, which would provide economic development assistance to persistently distressed communities. [Kelly has supported the program](#), which has the potential to help communities throughout rural Arizona.
- \$250 million for the establishment of a new Regional Clean Energy Innovation Program, to support partnerships between researchers, industry, and communities to better deploy clean energy solutions in rural, tribal, and disadvantaged communities.
- Establishing an Intramural Emerging Research Institutions Pilot Program to allow the National Science Foundation to conduct targeted outreach to tribal colleges and universities, and minority-serving institutions of higher education to increase the opportunities for students and researchers to receive federal research funding and opportunities.

Revitalizing America's Dominance in Global Research, Development, and

Innovation – As an engineer and astronaut, Kelly knows that no country is better than the United States at figuring out the most complex technical challenges in the world. As a member of the Energy and Natural Resources Committee, and a lead negotiator on the bicameral conference committee on the America COMPETES Act, Kelly secured the following priorities in the CHIPS Act of 2022:

- The Department of Energy Office of Science for the Future Act, which Kelly [helped craft](#) as a member of the Energy and Natural Resources Committee. This is the first ever comprehensive piece of authorizing legislation for the science programs at the Department of Energy, which conducts some of the most advanced and important work in the fields of microelectronics, advanced computing, high-energy physics, nuclear physics, and renewable energies.
- \$20 billion for a first-of-its kind National Science Foundation Directorate for Technology, Innovation, and Partnerships, - which will accelerate domestic development of national and economic-security critical technologies such as artificial intelligence, quantum computing, advanced manufacturing, 6G communications, energy, and material science. The establishment of this new directorate was envisioned and established in Kelly's [Endless Frontiers Act](#).

Advancing America's Space Exploration – As a former Astronaut, Kelly understands the ability NASA has to make technological discoveries that benefit our entire country while inspiring future generations of researchers, innovators, and explorers. And as Arizona's Senator, Kelly has seen first-hand the outsized role that Arizona's universities play in supporting NASA's research missions. As a lead negotiator on the bicameral conference committee on the America COMPETES Act, Kelly secured the following priorities in the CHIPS Act of 2022:

- Requiring NASA to launch the University of Arizona's Near-Earth Object Surveyor not later than March 30, 2026. This is the first-ever authorization of this

critical, Arizona-led mission which seeks to proactively identify all potentially hazardous asteroids to Earth. Kelly has [championed the program](#) since he was sworn into the Senate, and [continues to champion its full funding](#).

- Authorizing the Artemis Moon Program, which would return Americans to the surface of the Moon by the end of the decade, including the first woman and person of color to set foot on the lunar surface. Kelly championed the authorization of the Artemis mission through his [Advancing Human Spaceflight Act](#).
- Maintaining the ongoing use of the International Space Station through the year 2030, and establishing priorities for research, as required to bring Americans to Mars. Kelly, who has visited the International Space Station on four separate missions, championed the extension of the space station's mission through his [Advancing Human Spaceflight Act](#).
- Supporting NASA's Science Priorities, including, including Earth science observations and the search for life beyond Earth, as well as the development of the Nancy Grace Roman Space Telescope, the successor to the James Webb and Hubble space telescopes.