

# 2024

## PUBLIC POLICY GUIDE



ARIZONA  
TECHNOLOGY  
COUNCIL  
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# Public Policy Guide 2024

The Arizona Technology Council is the principal advocate for science- and technology-based companies in Arizona. The Council continuously monitors federal, state and local legislation and policies that impact the sustainability and growth of Arizona's technology industry. Through the collective strength of its members, the Council informs and educates policymakers on issues that are important to Arizona's technology sectors.

From the U.S. Congress and the Office of the Governor to legislative committee rooms and city halls across the state, the Council serves as the voice advocating for a technology-based, pro-growth and business-focused agenda.

The Council and its Public Policy Committee hereby submit the 2024 Public Policy Guide. In creating this document, the Committee relied heavily on the Council's mission by preparing key ideas, goals and legislative initiatives to:

- » Improve the business climate for technology-based companies.
- » Provide sources of risk capital that encourage entrepreneurship, with a focus on minority entrepreneurship.
- » Create an environment that supports science- and technology-related job retention and creation.
- » Attract, train, retrain and retain the diverse talent required to compete in a global innovation economy.
- » Support and showcase Arizona businesses in their journey to becoming more diverse, equitable and inclusive.
- » Provide pathways for all Arizonans to participate and thrive in a vibrant, high-tech economy.

The committee created a list of principles in several subject areas then established related positions to be used as the foundation of the Council's public policy efforts in 2024. In some cases, the positions will advance through development and advocacy of legislation that will be introduced during the Arizona Legislature's 2024 session. In other instances, the positions will be used on an ongoing basis as policy makers introduce new regulations or changes to existing regulations pertinent to Council members. At all stages, the committee will be engaged in various efforts to advance the position of Arizona's technology companies. The following principles and positions will aid elected officials and other stakeholders at all levels of government and business as they craft legislation and policies that will affect Arizonans and the Arizona economy for years to come.



# 2024 ARIZONA TECHNOLOGY COUNCIL LEGISLATIVE PRIORITIES

- » Support the reauthorization of the Arizona Commerce Authority.
- » Support economic development programs that have proven to work for Arizona. Maintain and fund programs that support manufacturing; encourage research and development; support high-quality, high-paying jobs; and incentivize innovation. Ensure these programs are continued and additional restrictions are not applied that would hamper the economic growth and success Arizona has experienced. During the past several years, the Council has been successful in helping extend and expand these programs. Some economic development tools may need to be modernized to ensure the most effective utilization of tools that continue to spur economic growth.
- » Develop a phased-in option for students to enroll in a computer science course offered by their school or an online course approved by the Arizona Department of Education. For high school ages, the course should be a standalone computer science course, and for younger grades, computer science principles should be incorporated into a general education course. Support funding for the computer science courses and accompanying teacher development to support this program.
- » Seek opportunities and measure their progress to positively impact the diversity, equity and inclusion of the workforce and its leadership, and grant equitable access to essential services (e.g., broadband, transportation, employment, education opportunities).
- » Work collaboratively with both the Arizona Corporation Commission (ACC) and the Legislature to advance energy policy that encourages demand-side adoption of energy efficiency, prioritizes clean and renewable energy use, invests in electric vehicle infrastructure development, and supports innovation in the industry. Protect against attempts to undercut the authority of the ACC to promulgate and implement clean energy policies.
- » Look for opportunities to expand Arizona's science, technology, engineering and math (STEM) education, including computer sciences and coding opportunities for students. Focus on long-term, shared, sustainable and flexible STEM missions that bridge, integrate and strengthen the learning opportunities offered by organizations across sectors instead of isolated, independent entities. STEM education helps prepare our students for the jobs of not only today but of the future and will build a strong, diverse talent pipeline to meet the state's continued growth.





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# 2024

PUBLIC POLICY GUIDE



## State Policies and Positions



# AEROSPACE, AVIATION AND DEFENSE

## PRINCIPLE

Arizona continues to be a vital contributor to U.S. national security interests by fostering a pioneering spirit in aerospace, aviation and defense for generations. With more than 1,250 companies in aerospace and defense—including major prime contractors and space sector leaders such as Raytheon, Honeywell, Boeing, Lockheed Martin, General Dynamics, Northrop Grumman, Blue Origin and Virgin Galactic—Arizona boasts thousands of highly skilled technology workers with high-paying jobs. Additionally, the state's military bases contribute nearly \$11.5 billion annually to the Arizona economy, according to the 2017 “Economic Impact of Arizona’s Principal Military Operations” study commissioned by the Arizona Commerce Authority (ACA) and prepared by The Maguire Company. The report also states that Arizona’s six military installations and four National Guard operations are responsible for creating more than 76,000 direct and indirect jobs.

State leaders and members of the Legislature should develop, publish and implement strategies that will maintain, strengthen and grow the aerospace, space, defense, aviation, and unmanned-systems industrial base. In turn, this will give Arizona a competitive edge as a top state supporting U.S. national security objectives.

## POSITIONS

### SUSTAIN DEFENSE SPENDING

Create an environment that enables sustainment and growth of total billing in defense contracting in the state. Arizona has enviable aerospace and defense assets, as shown when PwC ranked the state No. 7 in U.S. aerospace manufacturing attractiveness for 2020. As such, we must encourage through education an understanding of and appreciation for key military assets and their continuous economic impact on the state. These assets include the Barry M. Goldwater Range, the Buffalo Soldier Electronic Test Range, U.S. Army Yuma Proving Ground and Marine Corps Air Station Yuma, as well as U.S. Air Force training and readiness at Luke Air Force Base for the F-35 and Davis-Monthan Air Force Base for multiple missions, including the A-10, HH-60W and C-37B. We also need to maintain and protect the state's unique environment that enables testing of key command and control,

intelligence, communications, weapons, and vehicle equipment without extraneous electronic or encroachment interference in Southern Arizona.

## **PROTECT SMALL BUSINESS DEFENSE SUPPLIERS IN ARIZONA**

Work to ensure cybersecurity requirements do not become increasingly onerous. Considering growing cyber threats to U.S. national security, the global economy and small-business defense suppliers, the Arizona Technology Council agrees the need for and wholeheartedly agrees with the relatively new requirements that such government contractors become increasingly cyber-resilient. However, it is important for the federal government to understand that cyber requirements will add significant operating costs to small defense businesses in Arizona and elsewhere that are currently active in our nation's defense supply chain. As such, imposing these additional costs and burdens on small businesses could deter their ability or desire to remain active in defense markets. Ideally, the degree of the return on such investment for the added costs should be analyzed. We do not want to drive down the number of Arizona companies in the aerospace and defense supply base due to unnecessary onerous requirements that are not required for cybersecurity resilience.

## **SHIELD ARIZONA'S MILITARY BASES**

Shield Arizona's six military bases from development interference. Ensure military airspace provides unfettered access from the bases to military test ranges in the state without restrictions due to overdevelopment.

## **EXPAND MILITARY BASE MISSIONS**

Examine the future mission focus for all six military bases in Arizona. Work with local support groups to expand their mission profile in areas such as:

- » Artificial intelligence
- » Unmanned air and ground systems (offensive and counter operations)
- » Robotics
- » Cyber operations and defense
- » Pilot training
- » Space operations

Specifically, protect and increase the missions of Fort Huachuca, which include NETCOM's cyber defense, networks, unmanned aerial systems (UAS) training, intelligence, and exceptional teaming with the U.S. Department of Homeland Security. Conduct research and seek additional missions such as special operations stationing and training for which Fort Huachuca is best suited in terms of job growth. Protect and promote rightsizing of the A-10 mission at Davis-Monthan Air Force Base while supporting adequate mission replacements, including the F-35 and the U.S. Air Force's close air support and rescues Centers of Excellence. Grow F-35 pilot training at Luke Air Force Base and Marine Corps Air Station Yuma. Enthusiastically promote and grow unmanned testing and development at U.S. Army Yuma Proving Ground. Embrace and promote the exceptional Arizona Army National Guard.

## **EXPAND UNMANNED AERIAL SYSTEMS**

Explore opportunities to expand the capabilities of the largest UAS training center in the world at Fort Huachuca. Actively guard against the relocation of the training center to another state and seek ways to cultivate strong ties and additional projects with Nevada, one of the six states in the nation selected as test sites for UAS, by leveraging existing assets statewide. Also, seek new mission growth in the counter-UAS area, which is just beginning at the U.S. Department of Defense. Promote the defense industry in the expansion of private and personal UAS. In addition, support policies that encourage development and use of UAS technology for commercial applications.

## **BUILD ON HYPERSONIC SYSTEMS**

Build upon existing corporate and academic infrastructure to position Arizona as the national leader in hypersonic system development. Hypersonic weapon systems and associated technologies have become the leading priority within the Department of Defense. Arizona can leverage Raytheon Missiles & Defense's decades of expertise and the investments made at The University of Arizona (UArizona) to create an environment for developing both near-term and far-term systems. Raytheon has demonstrated it is a leader in hypersonic system development with recent successful flight tests. UArizona is developing wind tunnel facilities and advanced computational fluid dynamics capabilities that support system development and academic research to advance state-of-the-art processes. Encouraging growth of the local industrial base and advanced manufacturing capabilities can position Arizona as the national center for military and commercial hypersonic system development.



## REINSTATE THE ARIZONA SPACE COMMISSION

Work with the Office of the Governor and the Legislature to reinstate the Arizona Space Commission under ACA to review information each past commission presented. The commission should refine and build upon those previous strategies, incorporating the valuable space sector to attract, retain and educate Arizona's skilled labor while improving the state's competitiveness in the sector. In 1991, the Arizona Space Commission was formed with the purpose of creating a unified direction for space-related economic growth and educational development. In December 1992, the commission presented its vision for the industry here in a report to the Legislature and then-Gov. Fife Symington. In 2008, the more broadly named Arizona Aerospace and Defense Commission was established with members from both public and private sectors with a similar mandate to create a strategic plan addressing Arizona's research, workforce, economic development and competitiveness issues related to the aerospace sector. Citigroup analysts report that the space subsector alone should reach \$1 trillion in annual revenue by 2040.

## ENCOURAGE COMMERCIAL SPACE TECHNOLOGY

Attract, encourage and nurture growth of commercial space market applications and companies in Arizona. Continue to support and expand high-profile research and development programs at NASA and other agencies for major end programs such as OSIRIS-REx and NEO Surveyor at UArizona and Psyche mission at Arizona State University (ASU). Encourage a market-research report on how the state can further attract commercial space activities and opportunities to Arizona. Benchmarking against other states that have passed legislation or promulgated rulemaking that supports commercial space activities can lead to faster commercial space growth in Arizona. According to a report published by the Space Foundation, the global space economy grew to \$469 billion in 2021. Arizona plays a critical role across the commercial space value chain through established corporations such as Boeing, Viasat, Honeywell and Northrop Grumman. There are also a host of new and early-stage commercial space entrants such as FreeFall Aerospace, Lunasonde, Phantom Space and Katalyst Space Technologies that are shaping Arizona's commercial space technology future.

## DIVERSIFY COMMERCIAL SPACEPORT LAUNCH SITES

Develop a comprehensive strategy and approach to the possibility of hosting various launch sites in the state, considering growing global demand for more frequent rocket launches with smaller payloads on smaller launch vehicles. Examples include the John McCain Yuma Spaceport, a vertical launch site, and the Coolidge Air and Space Port, a horizontal launch site. Encourage partnerships with other countries' emerging space efforts like the Australian Space Agency and the Japanese Aerospace Exploration Agency (JAXA) to explore the sector's full potential in Arizona. Adding launch locations in Arizona would mean significant differentiation and economic growth opportunities within the massive and growing global commercial space market. Support re-entry and landing site in the Wilcox region.

## PARTICIPATE IN MILITARY SPACE MISSIONS

Advocate Arizona to begin participating in military space missions now that the United States Space Force (USSF) has been bolstered by bipartisan support. UArizona's world leadership in space situational awareness makes it a natural partner for USSF in establishing space domain awareness mission leadership. UArizona and ASU both have substantial experience in space mission management that would make Davis-Monthan Air Force Base an ideal home for the establishment of graduate-level USSF professional military education.

## FUND SBIR/STTR

Continue to fund the Small Business Innovation Research (SBIR) program to fully leverage Arizona's strengths across primary research, development, prototyping, and early-stage manufacturing in support of national security objectives. Encourage industry/academia teaming for Small Business Technology Transfer (STTR) and collaboration for SBIRs to retain academic talent and graduates in Arizona.



# BIOSCIENCES AND HEALTH CARE

## PRINCIPLE

Advocate collaboratively with Arizona stakeholders to support the discovery, development, commercialization, distribution and availability of bioscience innovations. These innovations are imperative to helping solve the health care challenges of today and tomorrow while improving the lives of Arizonans and have the potential to lower overall healthcare costs.

## POSITIONS

### PROTECT UNIVERSITY RESEARCH FUNDING

Advance the research enterprise systemwide by working collaboratively with the Arizona Board of Regents. Proposition 301 funding allocations, including the Technology and Research Initiative Fund that fuels research and innovation at the state universities, should be protected by voters. Higher funding levels may be contemplated for the future. Increased focus should ensure equitable access to students of diverse identities working on research projects.

### SUPPORT ARIZONA HEALTH INNOVATION TRUST

Support increased funding of the Arizona Health Innovation Trust, which was created by the Legislature in 2022. The goal of the trust is to support the creation and commercialization of Arizona-based health innovations by providing workforce development programs, entrepreneurial support for Arizona health innovators, and mission-related investments that help these health innovators reach key development milestones and attract additional funding from angel investors and venture capitalists.

### OFFER INTERNSHIPS

Develop and fund a pilot program to support STEM internships that reflect the diversity of Arizona's high schools, community colleges and universities, and broaden access to underrepresented students.



## **MAKE HEALTH CARE MORE ACCESSIBLE**

Make efforts to ensure all Arizonans have equitable access and opportunity to benefit from the lifesaving and life-changing innovations that the biotechnology and medical technology industries can offer. These efforts should also focus on potential cost-saving measures and include ways to reduce the total cost of care for patients where possible.

## **SUPPORT ARIZONA BIOMEDICAL RESEARCH CENTRE**

Support the Arizona Department of Health Services Biomedical Research Centre's mission and its grant process for funding opportunities designed to identify and select high-impact bioscience research, education and innovation projects that can benefit the people of Arizona today and in the future.

## **CREATE HEALTH INFORMATION EXCHANGE**

Support the creation of a nonprofit health information organization designated by the Department of Health Services as Arizona's official health information exchange organization. This organization would be permitted to receive, use and redisclose the confidential information from the child immunization reporting system and communicable disease-related data for purposes allowed under Health Insurance Portability and Accountability Act privacy standards.



## **USE EVIDENCE-BASED PUBLIC HEALTH PRACTICES**

Use evidence and science-based methodologies and information that is peer-reviewed or accepted scientific consensus in making public health decisions. Work to ensure prevention and reduction of diseases in Arizona, especially as the world is still navigating the worst public health emergency in recent times.





# BIOSCIENCES AND HEALTH CARE: TELEHEALTH

## PRINCIPLE

Telehealth and its integration into electronic delivery of health care should continue to be enabled and broadly adopted throughout Arizona. That includes educating and advocating for uniform deployment and enforcement of the new telemedicine laws at state and local levels, as well as facilitating expansion of the statewide telehealth infrastructure and ecosystem.

## POSITIONS

### INVEST IN TELEMEDICINE AND TELEHEALTH

Prioritize and invest in expanding telehealth infrastructure and the availability of the underlying technologies necessary for its robust application. Provide remote social services and behavioral health lifelines, as well as remotely connect medical professionals and families to isolated patients for telehealth services at home or through their local community centers and libraries. Telemedicine has become even more necessary and critical for Arizona's health care facilities, providers and patients. It will be especially important to health care providers who increasingly depend on broadband to recruit, train and prepare the workforce of the future, as well as support staff in interprofessional training, collaboration, and simulations and emergency preparedness activities. Build on past support for participation in medical and nursing interstate licensure through legislation to join the National Council of State Boards of Nursing's Advanced Practice Registered Nurse Compact. This would enable out-of-state medical professionals to deliver telemedicine consults and services in Arizona and medical professionals based in Arizona to reciprocally deliver teleservices to those in other compact-participating states. Encourage the expansion of health care resources and telemedicine equipment in libraries and develop health care navigator programs throughout the state.

Continue to support expanded telemedicine parity, licensure and electronic establishment of doctor/patient relationship laws that are driving Arizona telemedicine adoption and enhancing access to health care. Additional refinements include amending existing policies and rules for implementing the new telemedicine laws from which patients and health care providers are already benefiting. Education and advocacy for uniform deployment and education of the new laws at state and local levels are necessary for building a strong working consensus among providers, payers and users of telemedicine and telehealth services.



# CAPITAL FORMATION

## PRINCIPLE

The most efficient way to continue making Arizona a technology destination is to attract more investors and their financial resources. This goal can be accomplished by understanding what the risk-capital industry needs to motivate such a move of capital to the state. Arizona has developed a successful Angel Investment Tax Credit program and has a thriving research and development ecosystem. There are also several other economic development programs that have helped Arizona become a leader in technology, especially in the advanced manufacturing sector. Despite those programs, many companies seeking capital to enter the critical early stage of business development leave Arizona because crucial in-state funding is scarce. Arizona needs to address this issue because the state is losing out on some of this country's most coveted jobs.

## POSITIONS

### EXPAND ANGEL INVESTMENT

Explore the opportunity to expand the Angel Investment Tax Credit to better address the need. The Arizona Commerce Authority (ACA) certifies \$2.5 million in tax credits each fiscal year for investments made in qualified small businesses. Any unused credit capacity is carried over from the preceding year. The amount of angel investing increased dramatically after the program was recapitalized, which shows the program truly does incentivize and encourage investors to invest when they may not have otherwise. Currently, the \$2.5 million in tax credits is usually fully utilized within the first half of the year. The innovative companies that benefit from the Angel Investment Tax Credit investments produce high-quality, high-paying jobs, and the success of these companies results in the growth and diversification of the state's economy. Expansion of this program can result in more companies receiving investments, which can further increase the program's positive economic impact on the state.

### CONTINUE THE RESEARCH & DEVELOPMENT TAX CREDIT

Explore the possibility of making the current levels of the extremely successful Research & Development (R&D) Tax Credit permanent. The federal government's program is now permanent, and we recommend the state enact similar permanent legislation. This legislation will continue encouraging companies to invest additional R&D monies here in Arizona, which is mutually beneficial to the state and companies. Some companies have stranded tax credits, meaning they are unable to utilize them due to their



tax liability. It is important to note that a company only earns this credit by investing more than its previous year's investment in R&D. Some states have allowed companies to access and utilize these stranded credits. Arizona should do the same and create a program that requires a company to invest in some of the state's priorities, such as water sustainability and workforce development.

## INCREASE EARLY-STAGE VENTURE CAPITAL

Increase early-stage funding that is integral for startups and early-stage companies as they try to develop and market their products. Although Arizona has found creative ways to address some of these issues in recent years through initiatives such as the ACA's Competes Fund for microenterprises, there remains a significant need to reduce the number of companies recruited to surrounding states with seed and early-stage venture capital. Most states have created early-stage venture capital funds through which the states take on a role in supporting investments in these companies. Arizona needs to understand how to attract, encourage and incentivize early-stage funding of companies. Various funding models used in other states (e.g., Utah's fund of funds model, Maryland's insurance premium tax credits) need to be analyzed to determine which could be potentially viable methods in Arizona.

## COORDINATE INVESTMENT STARTUP ACTIVITY

Support ACA's efforts to:

- » Coordinate and build a more robust angel investment community by working with existing angel investment groups and accelerators.
- » Celebrate and publicize the success stories of the startup community.
- » Develop an early-stage company information clearing house so information about these companies can be shared with other members of the startup community, including potential investors, and still comply with the applicable securities laws.
- » Work collaboratively with Arizona stakeholders to create profiles of early-stage companies and share them with appropriate corporate development funds (CDF) for potential exploration and investment.
- » To complement the CDF initiative, the Legislature should provide an initial investment and ask Arizona-based CDFs to match the investment with the intent to establish a fund-to-funds model like the one in Utah.





# CYBERSECURITY

## PRINCIPLE

Cybersecurity is a top priority for Arizona and its residents. Virtually every business, organization, government entity and educational institution is at daily risk from cyber threats and data breaches. The rate and severity of cyber incidents is on the rise, with an estimated 2,200 daily cyber events. Ransomware continues to be a prominent form of cyberattack, increasing by over 37% in 2023, and malicious actors increasingly deploy sophisticated techniques, such as social engineering, and exploit system vulnerabilities to access protected networks. Small and medium-sized businesses (SMBs) are particularly vulnerable to cyber threats. Approximately half of all cyberattacks target small businesses, 70% of which are unprepared to deal with such attacks. Additionally, attacks are increasingly adopting a two-tier approach of exploiting victims for ransomware and in turn extorting victims by threatening to sell extracted data.

These ransomware attacks are expected to further accelerate and be aided by the application of machine learning (ML) and artificial intelligence (AI) by our adversaries, particularly the use of large language models (LLMs) like Open AI's Chat GPT and Google's Bard. These same ML/AI tools are also being used to accelerate and morph code development.

As cyberattacks increase, so do the costs. In 2023, cyberattacks are estimated to result in \$6 trillion in damages while the costs associated with investigating a breach have increased to roughly \$4.5 million per incident. The increase in ransomware attacks triggered a 50% increase in cyber insurance premiums in 2022, with global 2023 premiums estimated to reach \$12 billion to \$14 billion. Cyber preparedness is key to staving off these escalating costs. Arizona's public and private sectors should continue to take a pro-active approach to cybersecurity improvements.

Arizona continues to be a national leader in the cybersecurity sector by attracting cybersecurity companies and talent, promoting sound cybersecurity practices among state organizations, and launching the Cyber Command Center at the Department of Public Safety's Arizona Counter Terrorism Information Center, which is heavily focusing on being a model for the nation for public-private partnerships. The increase in employees working remotely, coupled with the growing rate of cyberattacks by criminals and nation states, has placed significant demands on Arizona's cyber workforce. There are over 8,000 open cybersecurity jobs across Arizona.



## POSITIONS

The Arizona Technology Council will help by focusing on the following three core cybersecurity positions:

### CYBER RESILIENCY

Promote programs to educate and incentivize businesses, particularly SMBs, to implement cybersecurity protections and best practices for incident response.

### EDUCATION AND WORKFORCE

Support funding for cybersecurity education for K-12 students and encourage expanded certification programs and post-secondary degrees in information technology and cyber curricula. Provide increased opportunities for educator training and professional development in this critically important area.

Help equip the current workforce with the skills necessary to succeed in the cybersecurity field, reskill those transitioning to the field, and develop the next generation of cyber protection and response professionals.

### LAWS AND REGULATIONS

Support responsible state and local laws and regulations that promote cyber awareness, education, and preparedness for Arizona's private and public sectors, and offer cyber resources and training for SMBs to help alleviate financial barriers to cybersecurity improvements. Additionally, continue to support incentives for private sector investment in advanced research and development, particularly focused on AI/ML to use as defenses to the increasing attacks.







# DIVERSITY, EQUITY AND INCLUSION

## PRINCIPLE

Over the past few years, diversity, equity and inclusion (DEI) has risen in priority to become a business imperative. Consumers are taking their business to companies with a proven commitment to DEI. Across the country, a growing number of laws and requirements are being enacted to support greater diversity in the workplace, on company boards and in government entities. Organizations need to progress or risk a limited candidate pool, reduced market share and, ultimately, lost profitability. Employees are looking to leadership to make an intentional DEI approach that makes a lasting difference. Supporting this continued progress is essential to Arizona's continued economic success. New statutes and regulations should not penalize companies for embracing DEI initiatives or otherwise impair their access to free speech. Ensuring equitable employment opportunities and access to basic core services (e.g., health care, broadband, education, affordable housing, living wages) is essential to the pursuit of a better life and economic mobility for all Arizonans.

## POSITIONS

### PROMOTE AWARENESS

The Arizona Technology Council will prioritize awareness of the economic benefits and importance of DEI and the emergence of best practices through programming. We will exemplify via subject matter expertise how DEI is critically important to a healthy economic future for Arizona and the continued growth of the state's technology ecosystem. This is only possible through intentional programs baked into every aspect of business, government operations and legislative priorities, and can be accomplished through:

- » Deliberate integration of DEI principles and goals in other sections of this Public Policy Guide, especially Workforce, Telecommunications and Economic Development.
- » Proactively supporting the business and technology ecosystem in driving DEI internally and externally.
- » Showcasing successes and business impact of companies with leading DEI practices in Arizona.
- » Providing small and mid-sized businesses with DEI education programs and collaboration mechanisms to establish a shared set of goals and common metrics to assess progress.

- » Increasing awareness of the digital divide by proactively supporting the expansion and distribution of broadband, STEM education programs and laptops/tablets for students in underserved areas.
- » Leveraging commitments from the Council and member companies by speaking out against any proposed restrictions, limitations or barriers to achieving a more diverse, equitable and inclusive Arizona and technology ecosystem.

Business leaders and government entities now recognize that “intentionality” is a prerequisite for:

- » Evolving a more diverse, equitable and inclusive workplace, with a level playing field of opportunity for underrepresented individuals.
- » Proactively addressing discrimination in access to basic services that enable economic success and well-being (e.g., health care, housing, communications/broadband).

## PROVIDE EDUCATION

The Council will continue to provide DEI education and support to member companies and the business community at large, including:

- » Hosting the Tech Inclusion Forum quarterly series of events to showcase the Arizona technology community’s progress, relevant programs and personal journeys of champions in DEI.
- » Sponsoring DEI roundtables and collaboration initiatives.
- » Thinking globally but acting locally with new strategies to engage customers and talent via education and training programs.
- » Enabling diverse career paths across roles and areas.
- » Investing in workforce development as reskilling and upskilling programs are essential to creating, maintaining and growing a more diverse workforce with equitable opportunities for all.
- » Providing transparent career pathways information, access to education and training, internal advancement opportunities, and flexible work arrangements to improve inclusion, growth and engagement.
- » Growing a vibrant business community with a strong commitment to and focus on DEI, which is essential to the attraction of new companies to Arizona and the expansion of existing companies here.
- » Providing underrepresented businesses with entrepreneurial support, including coaching, mentoring and financial investments.







# ECONOMIC DEVELOPMENT

## PRINCIPLE

Arizona must be able to compete with any state or country by having the most competitive economic development tools possible while encouraging innovation, as well as business attraction, retention and growth. Arizona is becoming a known technology hub in the nation after creating, attracting and growing many technology companies in the past decade due to its favorable economic climate. Most recently, Arizona has been recognized as a national leader in advanced manufacturing. However, we must ensure we continue programs that assist this process, rather than adopting policies that could be detrimental.

## POSITIONS

### PROMOTE THE ACA'S WORK

Advocate for Arizona Commerce Authority's (ACA) continued funding and work to ensure it remains the platform for the state's economic development efforts. The ACA's mission is to grow and strengthen Arizona's economy and facilitate the creation of quality jobs for its citizens by expanding and attracting businesses in targeted, high-value base industries throughout the state. Encourage support for the many ongoing ACA initiatives focused on enhancing Arizona's innovation ecosystem. An example is expanding the Arizona Advanced Technology Network— a partnership among Pima Community College, Central Arizona College and Maricopa Community Colleges— to include rural communities. Support the Arizona Office of Economic Opportunity's mission to increase the state's workforce quality and business climate through use of economic, demographic and regulatory data; policy development; and relationships with key partners.

### SUPPORT GLOBAL COMPETITIVENESS

Support the increase of resources dedicated to Arizona's State Trade and Export Promotion (STEP) program from the ACA and U.S. Small Business Administration. This would help ensure small businesses are able to compete internationally on a level playing field. The Council will also participate in trade missions around the world to provide economic opportunities for its members. Encourage support for RevAZ, which is the Arizona Manufacturing Extension Partnership (MEP) center created

through a partnership between the ACA and the National Institute of Standards and Technology. The goal of RevAZ is to become the central resource for technical assistance and all things manufacturing for Arizona's existing community of small and mid-sized manufacturers.

## ENCOURAGE INFRASTRUCTURE INVESTMENT

Support development of tools to facilitate public and private investment in infrastructure necessary to competitively enable high-tech manufacturing investments and growth. Ensure access to essential infrastructure, such as broadband, is available across the state to eliminate roadblocks preventing people from working from home if necessary.

## FOSTER LOCAL EFFORTS

Foster local economic development by supporting local entrepreneurs who engage with the global economy to deliver goods and services around the world. Encourage and support initiatives to make Phoenix, Tucson and other Arizona communities more supportive of startups and innovation. Ensure local governments do not create ordinances or other roadblocks to doing business in their jurisdictions but instead support streamlined processes when available. Ensure access to opportunities, credit, funding, investors and mentors since studies show these challenges can severely limit growth. Ensure funding opportunities are inclusive of startups led by women and people of color as data continues to show significant inequities in access to funding.

Promote increased investment and expand tax incentives for employment in federally certified opportunity zones, where many residents are people of color and low income. By adapting to remote work during the COVID-19 pandemic, companies have learned they can manage and thrive with workers located anywhere, creating an even greater opportunity to increase the diversity of their workforce with respect to hiring qualified talent.

## REDUCE REGULATIONS

Continue to reduce the number of regulations that discourage companies from relocating to or growing in our state. There was increased focus during Gov. Doug Ducey's two terms to get government out of the way of business and create an environment that fosters growth. There is continued support needed by the Legislature and business community to reduce regulations and create policies that



stimulate the economy instead of stifle it, especially in relation to new innovative and disruptive technologies that challenge some industries' ways of doing business.

## ELEVATE TARGETED INDUSTRIES

Expend substantial public policy efforts and accompanying resources on creating, attracting and retaining those employers that pay the highest wages. Wage studies routinely show that the many technology fields supported by the Arizona Technology Council employ the highest-paid employees. In particular, the Council recommends efforts to target the following industries: health and bioscience; semiconductor and electronics; IT and cybersecurity; energy; aerospace (including commercial space); aerospace and defense; telecommunications; optics; and medical, financial and educational technologies. Support Arizona's efforts to establish a leadership position that encourages adoption of new, innovative and disruptive technologies such as blockchain, artificial intelligence, machine learning, additive manufacturing, autonomous vehicles and the Internet of Things.



## **EXPAND AWARENESS OF BORDER JOBS FOR VETERANS ACT**

Work with U.S. Customs and Border Protection and the U.S. Department of Defense to create a streamlined process for veterans to apply for Customs and Border Protection positions. The Border Jobs for Veterans Act has created a mechanism for the military to transition into these enforcement jobs, but the program is not well known and needs ongoing support and promotion. Veterans have the training and skills that make them ideal candidates for these jobs.

## **BOOST ACCESS TO CAPITAL**

Provide border-based businesses with access to needed capital. Much has been made of the border flight by the three biggest U.S. banks—Chase, Bank of America and Wells Fargo, respectively—leaving many border-based businesses without access to working capital and lines of credit.



## **SUPPORT UNDERREPRESENTED ENTREPRENEURSHIP**

Support business efforts to boost underrepresented entrepreneurship by increasing supply chain diversity, creating pitch competitions and mentoring support, and providing additional access to capital for startups and growth of underrepresented or largely underrepresented businesses.

## **EXPAND ECONOMIC DEVELOPMENT PROGRAMS**

There are several economic development programs that have become essential in the attraction and growth of advanced manufacturing in the state. However, some of these programs are approaching or hitting their caps due to the growth Arizona's technology industry has seen over the past several years. Look for opportunities to expand these programs to meet the existing needs of the state.





# EDUCATION, WORKFORCE AND WORKPLACE

## PRINCIPLE

The lack of skilled talent continues to be a top challenge and barrier to business growth in Arizona. Additionally, data continues to show the pandemic has had significant impact on education outcomes from pre-K through higher education, including declines in high school graduation and postsecondary enrollment. A robust, aligned and inclusive pre-K-12 and postsecondary education and workforce development system connected to labor market needs eliminates inequities and provides all Arizonans with education and career opportunities is more important now than ever. Expanding access to and participation in quality advanced coursework for all students, particularly those who are typically underrepresented in these courses, is also critical to preparing students for higher education and careers. At all levels, STEM education must be proactively supported, with access to high-quality STEM education available for all students. Workforce development and retention strategies and funding should be coordinated and aligned with targeted high-skill, high-wage and high-demand industry sectors for all communities and individuals.

Such a system of support will provide the foundation of a healthy Arizona technology community and innovation economy by:

- » Incentivizing and developing cross-institutional partnerships from education, community, government and business that enhance Arizona's STEM ecosystem.
- » Focusing on increased graduation from high school for all students, as well as credentials, certificates and degrees in high-wage, high-demand STEM jobs.
- » Encouraging companies to provide work experiences, including internships and apprenticeships, for students from K-12 through higher education to develop STEM workers.
- » Reducing barriers to full participation of all Arizonans in an inclusive, equitable economy.
- » Enabling the attraction and retention of in-state, remote and imported talent needed for Arizona to thrive as a technology hub, with a heightened focus on underrepresented talent.
- » Eliminating the digital divide by guaranteeing foundational digital skills training, increasing access to broadband and needed devices to ensure equitable opportunities for education, training and job opportunities for all.

- » Increasing public awareness of the importance of STEM as an educated citizenry for Arizona's future workforce.

## POSITIONS

### **CAREER AND COLLEGE READINESS: DUAL ENROLLMENT, AP COURSEWORK, CTE AND CREDIT FOR PRIOR LEARNING**

Increase Arizonans' attainment of credentials, micro-credentials, certificates and degrees aligned with business needs, and accelerate economic development by championing support for improvements in pre-K through postsecondary education and workforce development. Major areas of focus should include supporting high expectations for all students; providing funding for career awareness and exploration and the development of state board of education-mandated student Education and Career Action Plans (ECAPS) beginning in middle grades; leveraging policy and funding to close equity gaps in participation and performance in advanced coursework; spreading awareness of career pathways for students and adults to align with Arizona's targeted growth industries, especially in STEM; and increasing industry engagement, especially in work-based and work-like experiences provided through high school and postsecondary education. Additionally, support innovative approaches to adult basic education that allows adult learners to obtain high school-equivalency diplomas while obtaining a college credential in skills that will support a livable wage. Continue to enhance and support the development of relationships between K-12, community colleges and universities to diversify and expand career readiness options for Arizona youth.

### **DUAL ENROLLMENT AND CREDIT FOR PRIOR LEARNING**

Increase dual enrollment utilization by maximizing additional funding for tuition assistance and addressing the key issue of availability of qualified teachers. Data clearly shows dual enrollment increases high school and postsecondary completion and supports early talent development needed for the innovation economy Arizona wants, as well as economic prosperity for its citizens. Ensuring access to and equity in dual enrollment opportunities for all students, regardless of socio-economic status or rural, remote or urban location, is critical to increase diversity and credential, certificate and degree completion. Implementation of early college and career high

schools focused on dual enrollment and intentionally connecting high school and postsecondary education — blurring the lines between the two to better reflect today's education, training and workforce development needs — is a proven model of success. Increasing collaboration between high school and postsecondary counselors and educators to support seamless transitions for students is an important step in that direction.

Ensure availability of dual enrollment classes for all students by supporting solutions to provide teaching capacity and incentivize, reward and recognize education required for certification. Maximize utilization and support of Arizona Teachers Academy funding available to support teachers seeking dual enrollment certification, with a focus on high-demand STEM subject areas. Implement innovative approaches to ensure access for underserved schools and students, including building on improvements in live remote learning to bring qualified teachers to students regardless of location. Additionally, support community colleges in designing a dual-credit model for adult learners and opportunity youth ages 16-24 who are neither in school nor employed, allowing these individuals to enroll in both adult basic education programs and community college courses simultaneously while building the talent in Arizona. Further, reduce costs and barriers to college entry for working adults who are Arizona@Work WIOA-eligible clients seeking enrollment in Arizona's community colleges by expanding policies for former and current military members and awarding credit for prior learning.

### **EXPAND ACCESS TO ADVANCED PLACEMENT COURSEWORK**

Leverage policy and funding to expand equitable access to and participation in advanced placement (AP) coursework, with an emphasis on AP STEM courses, through using data and other criteria to identify students ready to take AP courses, teacher training, professional development, and funding to assist low-income students with exam fees. Closing these gaps to AP courses is essential to giving Arizona students, particularly those who are traditionally underrepresented, the opportunity to experience the benefits of challenging coursework and earn college credit while in high school. Research shows that students who take AP courses are more likely to enroll in college, stay in college, excel in their classes and graduate in four years. Additionally, students who take AP computer science principles in high school are more than three times as likely to major in computer science as similar students who did not take the high school course, providing students invaluable skills



that prepare them for high-paying, in-demand jobs. AP and career and technical education (CTE) courses can also work in tandem to support career readiness by encouraging the development of the academic knowledge and technical skills that together are increasingly important to students' overall employability. Therefore, AP courses can be embedded into CTE pathways and programs of study as these courses complement and supplement each other by allowing students to explore coursework and develop relevant skills focused on career areas in which they aspire to work.

## RESTORE CAREER AND TECHNICAL EDUCATION DISTRICT (CTED)

Fully restore 9th grade and adult education CTE/CTED eligibility and funding to increase access to work-based learning and expand the window of opportunity students have to complete industry-recognized CTE programs and reauthorize CTEDs to serve students through age 21 regardless of graduation status. Increase access and equity to CTE students by allowing CTEDs to receive adequate transportation route mile funding to transport students to their CTEDs.

## ENSURE TRANSPARENT DATA AND ACCOUNTABILITY

Fund the strong support necessary to meet the accountability metrics set by the Arizona Education Progress Meter. Provide funding for and support the implementation of meaningful and aligned accountability systems and transparent reporting of disaggregated data, with appropriate resources and training. Driving attainment of the statewide goal of 60% of Arizona adults holding a postsecondary degree or credential by 2030 is supported by strategies including dual enrollment, AP coursework, CTED completion and credit for prior learning.

## INCREASE EDUCATION FUNDING

Fund the state's P-20 public education system with consistent, dedicated and sustainable revenue streams. More specifically:

- » Develop and support mechanisms to fully, equitably and sustainably fund Arizona's Pre-K-12 education system, CTED expansion, access to quality advanced coursework such as AP and dual enrollment courses, and community colleges and universities while focusing on equity, performance and accountability.

Ensure funding mechanisms that position Arizona Pre-K-12 at minimum with mean-level funding among the 50 states.

- » Permanently eliminate the aggregate expenditure limit for district schools or modernize the limit to reflect the current educational landscape crucial to ensuring the equitable distribution of resources without violating this arbitrary limitation that has not been updated for decades.
- » Maximize state funding to ensure competitive salaries to attract, reward and retain teachers and staff, including an emphasis on difficult-to-fill positions and diversifying the teacher workforce. Support policy that respects and rewards teaching as a profession.
- » Support sustainable state finance formula changes by adding an "equity weight" to give school districts the aid necessary to close existing achievement gaps for students in lower socio-economic circumstances.
- » Promote the inclusion of community colleges into the existing college "Promise" scholarships program by providing the necessary funding and administrative infrastructure for community college district participation, increasing utilization, equity and access to higher education.
- » Modernize the community colleges aggregate expenditure limitation formula to reflect increased weighting for in-demand, high-cost CTE enrollments and include short-term, non-credit training for incumbent workers in targeted high-wage job growth.
- » Support the restoration of the operational formula for all community colleges.
- » Revise the statutory full-time student equivalent formula to reflect predominant learner course-taking, which is part-time, and allow non-credit workforce training to count toward the formula's calculation.
- » Ensure funding for computer science teacher training aligned with Arizona K-12 computer science standards.

## CULTIVATE STEM ECOSYSTEMS

Engage business, K-12 and postsecondary education and workforce and economic development communities in collaborative, integrated sector and cross-industry strategies and implementation through the deployment of Arizona's STEM ecosystem and the opportunity to create one system. A STEM ecosystem would allow efficiency, shared best practices, resource sharing, and targeted dollars and coaching for those who need it most. In short, this program would connect the dots among the state's

STEM partners, ensuring the best return on investment for state-invested dollars. Advocate and support policies to cultivate a statewide STEM ecosystem including but not limited to state-supported funding for STEM ecosystems. Leverage programs, organizations and agencies charged with addressing skilled-workforce shortages in high-tech industry sectors. Given Arizona is home to a flourishing STEM industry base and is expected to significantly grow by 2027, investing in a statewide STEM ecosystem will result in expansion of STEM business and education opportunities throughout rural and urban Arizona communities, fueling a strong and diverse talent pipeline prepared to meet the state's anticipated growth.

Support and promote a focus on STEM education through the Arizona Teachers Academy, a program that provides free college education to those willing to go into teaching and remain there for at least four years.

## **DEVELOP INNOVATIVE LEARNING AND EDUCATIONAL TECHNOLOGY**

Arizona should develop a coordinated strategy to promote and support adoption of innovative ideas and new technologies in libraries, K-12 and higher education, including blended learning, flipped classrooms, digital curriculum, virtual online labs, makerspaces, robotics instruction, and competency- and outcome-based innovative learning approaches. A significant cluster of e-learning and innovative educational companies and institutions could create the opportunity for Arizona to be a leader in innovation and transformation of educational technology and outcomes, including workforce development.

Drive increased use of digital curriculum and STEM programs, including new courses and curriculum in emerging areas of artificial intelligence (AI) and cloud computing to better prepare students for the jobs of the future and improve learning outcomes for diverse student populations. Expand opportunities for online teacher training such as ASU Prep Digital's Arizona Virtual Teacher Institute. Provide ongoing funding and support for the Office of Educational Technology within the Arizona Department of Education (ADE) to serve local education agencies seeking assistance, support or coordination, and act as a bridge to other organizations and institutions with concurrent and overlapping responsibilities in order to maintain a keen focus on supporting educator excellence and an increase in academic outcomes for local education agencies.

## **EXPAND BROADBAND ACCESS**

Continue to enable broadband availability for rural K-12 schools and libraries, as well as higher education at predictable, reasonable costs while driving online education applications and collaborative activities to improve learning delivery and development of workforce skills and pathways. Support the Office of Educational Technology as a conduit between local education agencies and technology resources in support of digital equity for K-12 in Arizona. K-12 and higher education are facing enormous, unanticipated challenges as they virtualize their services and enable remote participation since some students remain unserved or underserved today. The homework gap is pressing for many disadvantaged students and their families, negatively impacting their ability to participate in today's learning environment.

Focus, plan and invest to resolve shortcomings that remain in student access to computing devices, software and technical support. Such support within schools and for students, faculty and administrators working remotely needs to be provided through a variety of mechanisms and programs. Because libraries especially have been focal points for community broadband access inside and around their facilities, libraries should continue to expand and be accompanied by public technical support services.

Since 1998, E-rate has provided \$1.7 billion to Arizona schools and libraries and consortiums for rural infrastructure expansion to make reliable, affordable broadband available to the institutions and their telecom equipment and services. The state should build on recent progress with E-rate programs by having the Arizona Commerce Authority's (ACA) state broadband director work with the ADE and Arizona State Library, Archives and Public Records. The state allocated \$5 million last year for E-rate matching funds that will unlock additional infrastructure and development benefiting anchor institutions and their surrounding communities and should continue to fund such matching in upcoming legislative sessions. Add staffing at ACA to coordinate the aggressive pursuit of E-rate, as well as other grants and participation in industry programs. Encourage ACA and the Office of the Governor to engage national and state organizations, as well as industry partners to help form and assist coalitions of school districts, public libraries, counties and regions to successfully qualify for and implement E-rate projects.

ADE has invested \$2.5 million in the Final Mile Project and should further invest in the expansion of this innovative, transformative project for the design, construction, implementation and provision of educational broadband services to students'.

homes in rural underserved communities. The project enables students to engage in virtual learning, research and skill development while also supporting economic development, health care and more in these communities. Arizona should also establish long-term funding solutions to supplant the federal Emergency Connectivity Fund to help schools and libraries provide the tools and services their communities need for remote learning.

## **USE AI TO SUPPORT TEACHING AND LEARNING**

The use of AI to improve teaching and learning affords many opportunities to support educators and students. Utilizing AI assistants to provide teachers with information to enhance customization of curricular resources to meet individual student needs along with the use and monitoring of chatbots to help personalize instruction are just a few of the ways AI may help provide educators with the information they need to work even more closely with students. This also maximizes educators' value and expertise in developing resources that are responsive to the unique knowledge, needs, strengths, capabilities and experiences that students bring to their learning. Effective professional development for educators to enhance confidence in the utilization of AI and the ability to guide students in safe and effective use is critical.

Aligning research, design and implementation that positions the needs of students at the forefront and is led by educators, students, families and caregivers, policy makers, and systems leaders is critical. Crucial is the pursuit of safe, ethical and equitable development, pilots and implementations that are culturally responsive and have intentional regard for use by all students, including special needs and English learners. Working across sectors such as education, innovation, research, and policy will help drive these important considerations.

Issues not only of data privacy and security but minimizing bias, promoting fairness, and ensuring transparency and accountability will help in the development and usage of models and resources that educators, students and parents/caregivers and community leaders can trust.

## **PRIORITIZE EQUITABLE AND INCLUSIVE TALENT, WORKFORCE DEVELOPMENT AND JOB TRAINING**

Align workforce development and education efforts with employer needs and statewide economic development goals. Expand use of the Talent Pipeline Management program and tools to support education and industry alignment, with an increased focus

on underserved communities, students and citizens. Support and increase the use of business-friendly, competency-based work experience models and pathways to accelerate skills development in high-wage, high-demand and high-growth sectors. Examples include internships and apprenticeships, CTE, early college and career high schools, and utilizing technology for scale and implementation in rural and remote locations. Maximize the unique capacity of Arizona's community colleges to build and deliver occupation-specific training to fill skills gaps, including customized training and programs and micro-credentials. Leverage incentives, tax credits and apprenticeship grants to promote high-tech internships and apprenticeship programs in fields like software development, cybersecurity and advanced manufacturing. Work with community colleges to market and expand awareness of credit for experience granted through prior learning assessment programs.

Creating opportunities to learn from employer success and leverage state, regional and federal investments in apprenticeship in Arizona is significant. These include Department of Labor grants for Pima Community College (PCC), Arizona State University and most recently Fresh Start, a community-based nonprofit that serves women. SRP's retraining of coal power generation techs to IT business analysts and Kudelski Security's cybersecurity apprenticeship program that begins in high school are excellent examples of employer success utilizing high-tech apprenticeships.

## **REINVIGORATE JOB TRAINING AND CAREER AWARENESS AND NAVIGATION SERVICES**

Support efforts to integrate workforce development programs and reinvigorate job training programs to help companies attract and retain needed talent, whether it is produced within Arizona or imported from other states and countries.

Support and provide funding for equitable and accessible career awareness and navigation services that support middle grades to mature adults seeking career information, guidance and training that can empower individuals and families to make informed decisions about education, careers, and employment pathways and choices. Pipeline AZ and My Future AZ, ADE's new graduation and career planning tool, are excellent examples of online career information systems.

Additionally, companies can drive more equitable recruitment and hiring of tech talent by leading in demonstrating the value of competency-based hiring and casting a wider, more inclusive net for talent by recognizing certificates, credentials and micro-credentials, the use of apprenticeships, and other "earn and learn" programs.



Additional consideration should be given to reducing dependency on requiring four-year degrees for positions, which excludes two-thirds of U.S. workers.

An increased focus on employee development as a source of upward mobility for mid-, senior- and executive-level talent development should also be encouraged along with the use of internal and comparative data to increase diversity and ensure fairness in pay, promotion and retention. Encourage and support companies' positive experiences with remote work to increase opportunities for hiring diverse talent.

## **EXPLORE JOB-DRIVEN FINANCIAL SUPPORT/ASSISTANCE**

Explore job-driven financial support models, including tuition waivers and "last dollar" scholarships/tuition assistance for adult learners to complete in-demand certificate or degree programs. Maximize and support utilization of new community college enrollment incentive program for low-wage workers to train for high-tech jobs.

## **CHILD CARE**

Many Arizonans lack access to affordable, quality childcare, the impact of which is felt by employers and Arizona's economy. According to a recent study, 48% of Arizona, including rural and urban areas of the state, is considered a "childcare desert" where there are too few licensed childcare slots for the families that need them. Additionally, 90% of childcare providers have staffing shortages and 23% have reduced their hours of operation. Additionally, it is estimated that Arizona loses \$1.7 billion annually due to childcare challenges.

The need for accessible and reliable 24-hour care impacts every industry and must be addressed. Making headway in addressing this shortage is also critical to the full participation of women in the workforce, as well as low-income workers who are disproportionately impacted by the lack of childcare. Childcare vouchers and subsidies help but only if childcare is available, so strategies must include increasing the availability of childcare, including educating and training more childcare workers while providing wages that make the field attractive. Public-private partnerships, business-to-business collaborations and the engagement of community-based organizations and childcare providers are needed to create innovative strategies to address this challenge.

## **UPDATE EMPLOYMENT NON-DISCRIMINATION LAWS**

Encourage policy makers to look at updating Arizona's non-discrimination laws critical for attracting and maintaining a competitive workforce, especially in the technology sector. Non-discrimination statutes should be inclusive of gender, race, religion, sexual orientation, gender identity, nationality, ableness and age in the areas of employment, housing and public accommodation. Employees should be judged on their merits instead of identities and employers should foster an environment of acceptance and inclusion where innovation can thrive. Updating Arizona's non-discrimination laws will ensure we remain competitive, which is good for our citizens and economy.

## **ADDRESS INEQUALITY IN CRIMINAL JUSTICE**

Encourage businesses to build on the state's second-chance hiring policy that eliminates the question about prior convictions on hiring applications and provides individuals with a past conviction to be considered based on current merit versus being excluded up front. This would open doors for many qualified individuals, allowing them to restart their lives, support their families and engage with their communities, as well as provide companies with an additional talent source. Since people of color are disproportionately impacted by the criminal justice system, this also helps companies support a more inclusive and diverse workforce. Additionally, maximize licensure for current and new residents by ensuring that any restrictions in obtaining an occupational license are narrowly targeted and provide a means to recognize successful rehabilitation.



# ENERGY

## PRINCIPLE

The link between technology investment and energy is fundamental and unbreakable. To attract investment capital and retain and grow its technology business sector, Arizona needs predictable and investable energy markets that ensure affordability, grid reliability and energy security while enabling companies to meet internal sustainability goals. Additionally, the state needs a secure and adequate water supply. Every key Arizona technology cluster—including aerospace and defense, semiconductor and electronics, health and bioscience, cloud/data centers, back-office processing, and alternative energy technology—shares these needs. Policy and legislative choices that enable market forces to improve the status quo have historically been favored. There are several attractive policy options that would benefit Arizona businesses, job creation and economic productivity. Several trade organizations, including the Arizona Energy Consortium, continue to find ways to provide more certainty in developing the state's energy policy for the future.

Transitioning to low-carbon technologies would provide the ideal landscape for Arizona companies and utilities to meet their sustainability goals. A growing number of companies are setting goals to source 100% renewable energy for their facilities and reduce their carbon footprint. Access to low-carbon or carbon-free energy resources that are cost-effective is an important factor for companies as they consider where to make future investments.

## POSITIONS

### LEVERAGE THE INFLATION REDUCTION ACT (IRA)

Leverage the benefit of the IRA through the Arizona Office of Resiliency by taking full advantage of the clean energy incentives, clean energy cost reductions, tax credit impact, power sector incentives, and net zero goals of the IRA.

### DIVERSIFY ENERGY SUPPLY UTILIZATION

Improve diversification of the state's energy mix by including cost-effective solar, storage and other renewables in addition to distributed energy resources. Utilizing a diversity of resources to generate clean electricity, store renewable energy, use energy more efficiently, and curb usage at critical times are all ways to increase reliability and affordability of electricity. Policy makers should enact laws that enable diversification of the energy supply while continuing to ensure reliability and stability of costs.

## **WISELY UTILIZE NATURAL GAS**

Intermittent renewable resources augmented by natural gas generation can provide a carbon-reduced, secure power source as Arizona transitions to a carbon-free market. Modern, flexible natural-gas generation will be important to maintaining reliability of the grid in the interim as it transitions to zero carbon.

## **EXPLORE NUCLEAR ENERGY**

Continue Arizona's utilization of the low-cost, carbon-free base load power of the Palo Verde Generating Station to benefit the state's residents and businesses. As the largest nuclear power plant in the nation, Palo Verde is the primary energy hub of the Southwest, establishing Arizona as a key market for interstate generation suppliers. Importantly, this excellent source of base-load power is best suited for the steady, predictable power needs of always-on manufacturing, data hosting and bioscientific experimentation.

## **SUPPORT CLEAN AND RENEWABLE ENERGY**

Support policies that provide the certainty needed to attract clean and renewable energy developers of all sizes, from rooftop to utility scale. Sustained economic investment requires that Arizona utility regulators and legislators create and maintain policies that enable capital-intensive investment in clean and renewable energy technologies. For many companies, clean and renewable energy is the future. Forward-thinking businesses are increasingly demanding that their electricity comes from renewable sources. Economic development is a huge area of focus for Greater Phoenix and Arizona as a whole, so it is imperative to continue developing supportive policies that allow companies to source clean and renewable energy that will encourage business creation, relocation and expansion. Arizona exhibits some of the best attributes for harnessing solar energy in the world. The state's low corporate tax rate, ideal geography, relatively inexpensive land, moderate climate, and proximity to substantial and in-place infrastructure provide real-world inputs for Arizona to establish itself as the leader of clean and renewable energy generation and innovation.

Energy policy that encourages demand-side adoption of energy efficiency, prioritizes clean and renewable energy use, invests in electric vehicle (EV) infrastructure development, and supports innovation in the industry should be prioritized. This

process has been expansive over many years and has included several stakeholders. This progress should continue as the importance of clean energy is a top priority for corporations across the state. Any changes to these rules and policies should be done in a thoughtful manner that includes all the different stakeholders across the state.

## **DEVELOP CLEAN HYDROGEN**

Prepare a roadmap that positions the state as a leader in clean-hydrogen development and attracts domestic and foreign investment to further expand a clean-hydrogen economy. Hydrogen is an energy carrier that cuts across sectors and has multiple benefits. It can be used to store energy for long periods of time and transport energy over large geographies. Fuel-cell electric vehicles—whether heavy-duty, light-duty or material-handling—powered by hydrogen create no tailpipe emissions. Hydrogen itself can be produced with near-zero carbon emitted, even on a life cycle basis. Additionally, hydrogen can play an important role in domestic energy security by increasing our energy resiliency and is critical for a lower carbon energy mix. It can be used broadly across several industries, including transportation, steel, ammonia and methanol production, and refining, as well as in residential and commercial buildings and power systems. By 2030, the national impact of hydrogen could create \$130 billion in revenue and 700,000 jobs, growing to \$750 billion in revenue and 3.4 million jobs by 2050.

## **EMBRACE ENERGY EFFICIENCY**

Support policies that encourage and embrace energy efficiency to keep Arizona's electricity costs low. Energy efficiency is consistently the least-cost energy resource to meet the state's energy needs. Robust energy efficiency programs and policies with a focus on peak demand will help Arizona businesses and consumers cut energy waste, reduce the need to build expensive power plants and save ratepayers money while creating jobs and economic opportunity in developing and deploying energy efficiency technologies.

## **GROW ELECTRIC TRANSPORTATION**

Create and maintain a robust and growing transportation electrification market and build out EV charging infrastructure as Arizona continues to foster innovation and grows into a world-class technology hub. The state is already attracting advanced transportation and EV manufacturing companies and has significant opportunity to



be a leader in this growing economic sector. Companies will not want to continue to invest in Arizona over other burgeoning EV hubs like Texas and California without demonstrated support to keep their market powered. A primary way to continue this momentum is to invest in charging infrastructure for personal vehicles and electric fleets. This, coupled with effective charging rate design, is critical for the state's renewable energy transition. Beyond personal vehicles and ride-sharing services, electrifying fleet vehicles including delivery vehicles, semitrucks, public transit vehicles, and school buses will result in cost savings for both the public and private sectors in Arizona.

## **SUPPORT ELECTRIC TRANSMISSION**

Continue to support transmission development and construction that enhances Arizona's ability to participate in a regional energy market, deliver the planned new resources required to meet sustainability goals and more efficiently use the existing transmission system. Provide the regulatory climate necessary for Arizona to maintain its leadership role in the coordinated and strategic development of transmission lines, allowing the energy industry to continue to prosper and facilitate the influx of private capital into Arizona.

## **DEPLOY ENERGY PLANNING**

Adopt a more robust regional approach to energy development that still maintains Arizona's policy autonomy. New generation is being required each year as Arizona continues to grow. With large, high-demand markets in the broader region, the expansion of the California Independent System Operator's Energy Imbalance Market, and Nevada and Colorado directing their utilities to join a regional transmission organization, Arizona has a tremendous opportunity to prosper through regional cooperation. A regional transmission operator or wholesale market would enable Arizona to earn revenue by selling energy at critical times—and power through heat waves that drive increased demand on the grid. This would help to integrate the growing amount of renewable energy more seamlessly on the grid and could drive an increase in economical and low-cost renewable energy. Regional energy planning can also offer greater resilience as the grid faces increased extreme weather-related events. Changing customer needs such as increased integration of EVs can place new demands on the way utilities provide power, making regional cooperation more important than ever. A more fluid and dynamic regional market would provide greater reliability and enhance Arizona and the region's ability to integrate a greater

percentage of renewables required to meet the low-carbon goals of today's utilities and businesses.

## **EXPLORE STORAGE TECHNOLOGY**

Look for opportunities to explore storage technology that is rapidly developing and holds promise to be an important companion to renewable energy. With substantial regional development of renewable resources, the Western Interconnection electric grid has periods of the year when generation resources and electric load are more difficult to match. A combination of storage technology and flexible natural gas generation may be key tools to successfully address this issue.

## **ENCOURAGE TECHNOLOGICAL ADVANCES**

Create a regulatory environment not just for today, but that encourages and embraces future technological advancement. There are growing trends towards smaller and highly efficient distributed generation units, microgrids, smart grids, and energy-storage technology. To the extent that legal constraints and rate structures resulting from existing energy policies prevent Arizona businesses from adopting new technology or artificially increasing the costs of such adoption, such constraints and policies should be modified.

## **ADDRESS WATER CHALLENGES**

Support the growth of technology-based industries that are developing innovative solutions to water challenges. This may include a focus on securing early-stage risk capital for these businesses and involve collaborating with economic development entities at local and state levels to attract more businesses. Support collaboration between the public and private sectors to develop new energy technologies that conserve water and augment supplies.



# Financial Technology (Fintech)

## PRINCIPLE

Arizona's financial technology (fintech) sector is among the most promising and fastest growing in our technology community. The broad and robust fintech community offers a diverse range of products and services with the potential of disrupting traditional financial services companies and markets. Arizona has shown leadership in breaking down regulatory barriers that could inhibit fintech innovation and emerging business models. To continue cultivating a fintech-friendly environment, our goal is to help drive state regulatory reform allowing use of virtual currency and innovative fintech offerings that meet the needs of Arizona's fintech sector where innovations primarily rely on this type of currency. Arizona must provide a robust, streamlined regulatory experience for virtual currency and non-bank firms that is transparent, allows or better encourages innovation, provides a level playing field for businesses that does not favor larger players over small ones, and appropriately protects consumers from harm.

## POSITIONS

### ADOPT DIGITAL SIGNATURES AND SMART CONTRACTS

Continue easing regulatory hurdles by updating Arizona statutes and regulations to enable and encourage broad adoption and use of digital signatures, as well as drive innovation in smart-contract applications. Traditional paper contracts can be quite inefficient and prone to fraud, which is why digital contracts tied to immutable blockchains are emerging as an alternative. Arizona lawmakers previously enacted groundbreaking legislation that amended the Arizona Electronic Transactions Act to include digital signatures recorded on a blockchain, enshrining their validity and enforceability for records or contracts, and additionally empowering use of blockchain technology for state corporate filings. These regulatory innovations have helped Arizona emerge as a choice location for companies that develop applications utilizing blockchain and smart-contract technology. We should continue to evolve and reform our fintech regulatory environment to stay at the forefront.

## **EXPAND BENEFITS OF FINTECH REGULATORY SANDBOX**

Continue positioning Arizona as an innovative hub for financial technology while helping prove that lighter regulation and consumer protection can coexist. Fintech startups are particularly disadvantaged by the difficulties and costs of complying with conventional state money transmission licensing regimens. Legislation adopted during the 2018 session created the nation's first state-level regulatory sandbox allowing limited access to Arizona's market for testing innovative financial products or services without first obtaining full state licensure or other required authorization. In 2019, additional legislation provided important technical corrections and clarifications to the law to ensure efficient administration and robust oversight of the program. Innovative initiatives are allowed to germinate through creation of an on-ramp or regulatory sandbox with exceptions to licensing rules for new companies based on low volumes or limited business activities that pose a lower risk to consumers. To date, more than a dozen companies have participated in testing a wide array of innovations. The Arizona Technology Council will work with the Arizona Fintech Council, a joint venture between the Arizona Bankers Association and CCG Catalyst Consulting, to publicize the sandbox to help attract new participants and leverage successful outcomes while supporting further efforts of Arizona's attorney general and the Legislature to evolve and improve the program over time. For example, the fintech sandbox should be expanded to permit testing of select insurance offerings and other financial products and services that can benefit from technological innovation.

## **IMPROVE PROPTech REGULATORY SANDBOX**

Help improve and evolve the property technology, or proptech, sandbox so Arizona can continue to lead in fostering innovation across the real-estate industry. Continue to allow the Arizona Commerce Authority (ACA) to operate the proptech sandbox that enables companies to test innovative products or services in the real estate and smart-property industries in a lighter regulatory environment. Approved in the 2019 legislation session, Arizona established the nation's first proptech sandbox. By reducing costly barriers to entry, the sandbox promotes the development of disruptive technologies affecting the way we rent, sell, buy, develop, and manage commercial and residential property.

## **FUND BLOCKCHAIN RESEARCH**

Continue to allocate state funds annually to recapitalize and sustain the Blockchain Research Grant Program to applied research centers going forward. The Legislature recently recapitalized the ACA's Applied Research Centers and Institutes program, including \$2.5 million in funds toward development of applied research in support of defined blockchain products or services for commercial use to help drive research and innovation that will assist Arizona's becoming a leader in this emerging technology sector.

## **INVOLVE THE ARIZONA CORPORATION COMMISSION (ACC)**

Encourage the ACC to work towards utilizing blockchain for corporate records and filings initiating trials and pilots to develop capabilities, gauge future direction and, when appropriate, inaugurate full-scale initiatives. Examine the potential to issue and trade securities on a blockchain platform. The ACC has opened a docket to examine the use of blockchain technology in Arizona's energy industry to help manage the distributed power generation and storage, transactive energy with more granular transactions, renewable energy credits, tokenization, IoT, cybersecurity, and other applications for distributed ledger technologies on the grid.


## **EXAMINE STATE GOVERNMENT RECORDS**

Examine potential use cases and drive the application of blockchain by the Arizona executive branch for the management and storage of state government records for cost, efficiency and security considerations through initiating trials and pilots to develop capabilities, gauging future direction and, when appropriate, inaugurating full-scale initiatives. Offer leadership and assistance to Arizona's cities, counties and tribes in digitizing, normalizing and consolidating property records following best practices and ensuring compatibility with other jurisdictions and open-data protocols.

## **ACHIEVE REGULATORY RECIPROCITY BETWEEN STATES**


Join the Multistate Licensing Agreement for Financial Services Companies to eliminate redundancies in state licensing of money-service businesses, which streamlines cumbersome regulations relating to virtual currencies. Arizona stakeholders should engage with other state and national organizations working to establish common



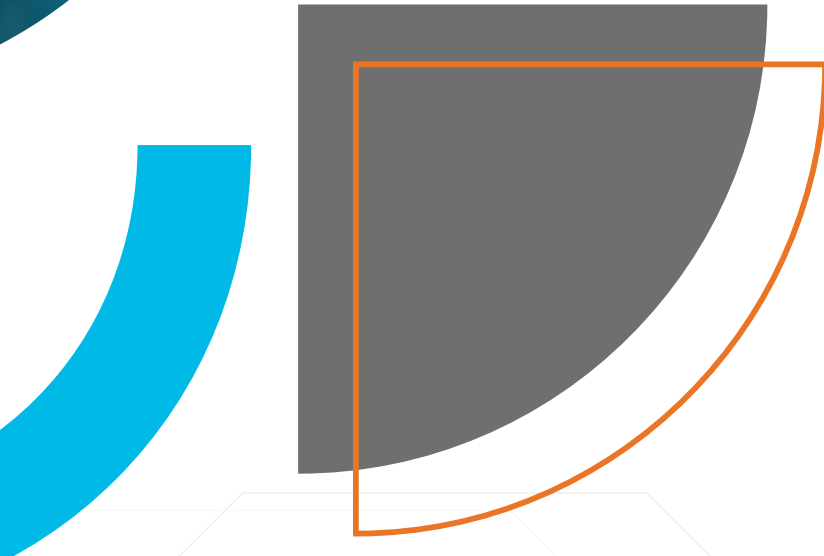


multistate money transmitter licensing and virtual-money regulation and licensure that would ensure legal and regulatory reciprocity between participating jurisdictions. Companies involved in virtual-currency activities are multi-jurisdictional by nature. Any artificial restraints on their ability to operate without regard to geographical boundary within the United States adversely impacts the significant cost-effectiveness and efficiencies that their business models offer to other companies and consumers.

## **CRAFT DECENTRALIZED CORPORATE STRUCTURES**



Continue to craft an Arizona policy foundation for decentralized companies and initiatives that break many of the legacy tenets of traditional corporate structures, identity frameworks and governance constructs, and help transcend legacy geographic boundaries. Our global economy and enterprise ecosystem have been pushed into a new realm of decentralization as the global pandemic forced new ways of conducting commerce and organizational interactions through a daily routine of virtual communications and media. As contemporary decentralized constructs emerge and attempt to reconcile with legacy centralized constructs (e.g., cryptocurrency versus fiat currency) across the globe, it is important that Arizona continues to form alliances strengthening trade and technology bonds with foreign municipalities and sovereignties, such as those formed with Israel, Germany, Mexico and Taiwan, and which should be emulated and expanded going forward. States such as Wyoming, Texas and Nevada have announced their commitments to be leaders in the blockchain and decentralized Web 3.0 realms, so Arizona should continue to drive deregulation, fund research and encourage industry innovation to sustain a competitive advantage in attracting commerce from around the world as organizations actively seek policy-friendly locations with clearly defined and innovation-enhancing public policy where they can establish and grow fintech businesses.





# OPTICS, PHOTONICS AND ASTRONOMY

## PRINCIPLE

Optics, photonics and astronomy are important economic drivers for Arizona technology companies. Combined, they add more than \$4.3 billion to the state's economy and support more than 19,000 jobs. One of the critical constraints to robust industry growth is the lack of a skilled workforce. As an enabling technology, optics applications are critical for many other industries, including medicine, mining, aerospace and defense, smart cities, and autonomous vehicles.

The University of Arizona (UArizona) holds a worldwide leadership reputation for optics, photonics—the application of light—and astronomy while providing academic prowess for related research and development (R&D). The university has been No. 1 in the National Science Foundation rankings for research dollars expended in astronomy and astrophysics since 1998. That ranking represents \$122 million spent in the state by UArizona in FY 2020. Less than 10% of the investment came from the state while substantial federal, international and philanthropic contributions were attracted to this highly visible scientific enterprise.

There are also large and notable departments in astronomy and planetary science at Arizona State University and Northern Arizona University. The three universities, the state's many affiliated and independent observatories, and the numerous entities in related fields attract and retain world-class technical talent. The output from optics R&D enables development of leading products and technologies that support the many applications that drive robust Arizona companies. Space exploration is renowned for its degree of spin-off technologies that improve society.

The optics industry in Arizona is represented by the Arizona Technology Council's Optics Valley Committee, whose mission is to catalyze, convene and connect a more robust optics industry sector. Optics Valley and industry growth are supported by the Arizona Optics Initiative, a program funded by the Small Business Administration. The program consists of three primary elements: helping existing optics companies scale up and grow, facilitating the formation and development of new entrepreneurial optics companies, and enhancing the visibility and community awareness of Arizona's world-leading optics industry.

The policy positions that follow are intended to support the goals of attracting future investments in optics, photonics and astronomy, and to grow a quality workforce.

# POSITIONS

## FOCUS ON WORKFORCE DEVELOPMENT

Strengthen support and enhance funding for community college programs directed at education for technology careers, including optics and photonics. Support the work in progress to supplement the optics education programs at Maricopa Community Colleges (MCC) and Pima Community College (PCC) with certified apprenticeship systems. MCC and PCC are developing optics curriculum for technicians to build the sophisticated products designed by engineers like those who graduate from the James C. Wyant College of Optical Sciences at UArizona. Continue support for Joint Technology Education District (JTED) programs at the high school level, including Pima JTED's launch of optics classes for preparation through community college and university programs, as well as direct entry into the workforce.

## ENFORCE DARK AND RADIO-QUIET SKY

Establish statewide dark-sky standards and support the state's \$4.3 billion optics, photonics and astronomy industry. Advocate and encourage dark-sky sensitive and appropriate use of light-emitting diode (LED) technology for outdoor lighting as its use becomes increasingly widespread. Support deployment of active lighting control technologies to reduce lighting levels to the minimum required for safety and visibility based on actual use by time of night. Support regional approaches to reducing and stopping the growth of artificial light negatively impacting observatories and the natural environment. Support suborbital and orbital missions specifically designed to avoid the negative impact of excessive reflected sunlight on astronomical observing facilities. Support efforts of observatories working collaboratively with operators of large satellite fleets to minimize their impact on ground- and space-based astronomy. Support the efforts of the growing number of Arizona communities working toward the official International Dark Sky Community designation awarded by Dark-Sky International headquartered in Tucson. Ensure that state and federally supported wireless connectivity initiatives coordinate with the state's premier radio observatories to minimize interference.

## GROW UNIVERSITY RESEARCH AND DEVELOPMENT

Strengthen opportunities to grow the impact of world-class research and development at Arizona's universities. Nurture the next generation of scientists by growing research partnerships with community colleges, where more than 50% of postsecondary students take introductory biology and other STEM courses and a large, diverse body of students is enrolled.

## SUPPORT NPI AND AIM PHOTONICS

Support the National Photonics Initiative (NPI) and the American Institute for Manufacturing Integrated Photonics (AIM Photonics). NPI is a collaborative alliance of industry, academia and government seeking to raise awareness of photonics, and drive U.S. funding and investment in five key photonics-driven fields critical to U.S. competitiveness and national security: advanced manufacturing, communications and information technology, defense and national security, energy, and health and medicine. AIM Photonics is an industry-driven, public-private partnership that focuses the nation's premier capabilities and expertise to capture critical global manufacturing leadership in a technology that is both essential to national security and positioned to provide a compelling return on investment to the U.S. economy.

## PRIORITIZE EXPORT REFORM

Ensure export reform policies support and encourage optics companies to engage in global commercial markets.



# STATE BUDGET

## PRINCIPLE

The state of Arizona's economy has thrived in recent years and enjoyed a large surplus going into the past few legislative sessions. The FY2024 budget conversations began with a surplus of more than \$2 billion. Ultimately, the Legislature passed a \$17.8 billion package, with an investment of about \$735 million in education, including overriding the FY24 aggregate expenditure limit for K-12; \$690 million in investments in transportation infrastructure; \$150 million to the Housing Trust Fund; \$40 million to the Homeless Shelter and Services Fund; and expansion of Kids Care. However, it appears Arizona is going into a session with a much different economic outlook, due to a potential upcoming recession and a massive growth in the amount of budget going towards the universal education scholarship accounts (ESA). The growth of the ESA program has been much larger than initially budgeted. As of July 2023, the state appears to have only a \$79 million surplus. This will make the budget cycle much more difficult in the upcoming session, with less money being available for anything not included in the baseline (or ongoing) budget. While there is approximately \$1.48 billion in the rainy day fund, it is unlikely the Legislature would approve a budget that utilizes much, if any, of those funds.

## POSITIONS

### PROTECT ANGEL INVESTMENT TAX CREDIT PROGRAM

Protect funding for the proven and highly successful Angel Investment Tax Credit and look for opportunities to expand the program, which is discussed more in the Capital Formation section.

### SUPPORT ACA PROGRAMS AND FUNDING

Discourage the Legislature from sweeping any funds not used in a particular fiscal year by the Arizona Commerce Authority (ACA) and its various programs, including the Arizona Competes Fund. This is destabilizing and tends to create a use-it-or-lose-it mentality, even when conditions warrant funds being carried over to the next fiscal year. Ensure flexibility as warranted within the ACA's funding for programs to help it achieve its mission.

### PROTECT STATE CONTRACTS WITH VENDORS

Preserve and honor negotiated contracts with state vendors as many members of the majority look for ways to reduce spending, even as the state has a large projected surplus. Many technology companies have contracts throughout state government. If the state does pursue reductions in this area, there should be an open process involving the vendor instead of unilateral changes made by the state or agencies.

### PRIORITIZE EDUCATION FUNDING

Prioritize increased and sustainable funding of the state's public education system consistently at all levels—including pre-K, full-day kindergarten, K-12 and postsecondary—and with accountability in a dedicated and sustainable revenue stream. Short-term reforms should include finding a sustainable and dedicated revenue source for education funding that does not endanger the state's economic climate. The reforms should include funding of K-12 education with a formula similar to that of Proposition 301, which positions Arizona at minimum with mean-level funding among the 50 states. Additionally, reforms should consider alternative ideas to appropriately fund pre-K and full-day kindergarten, K-12, CTE, equal-access dual enrollment courses, universities and community colleges. Additionally, computer science courses should be included in the state's educational plans and necessary funding should be appropriated. Long-term comprehensive funding reforms should modernize and promote a 21st century delivery model of education that focuses on performance and accountability. Arizona should ensure a high-quality education system to attract and retain high-wage jobs and the kinds of businesses that drive the innovation economy.



# TAXATION

## PRINCIPLE

Many taxes, especially those solely targeted at business, may have the effect of limiting potential growth in existing and new technology businesses. Policy makers should strive to institute tax policy that encourages existing businesses to expand; increases Arizona's competitiveness in business attraction, growth and retention; allows for a broad, stable tax base; and ensures similar businesses are treated fairly and equitably.

## POSITIONS

### EQUALIZE BUSINESS PROPERTY TAX

Pursue the eventual equalization of business and residential property taxes. Although Arizona has begun to reduce business property tax assessment ratios, businesses still faced property tax assessment ratios 80% greater than those of residential property owners.

### INCREASE CAPITAL GAINS DEDUCTIONS

Increase the current capital gain deduction from 25% to 57% to help reduce the advantage enjoyed by other states that have tax systems more closely aligned with the federal government. In most instances, Arizona's tax system conforms with or closely mirrors that of the federal government except in capital gains.

### PROMOTE DATA CENTERS

Protect Arizona's tax advantages in the exemptions given to promote the retention and expansion of enterprise and co-location data centers and continue to promote all levels of data center activity, including the migration of technology centers to Arizona.

### MODERNIZE TAX CODE

Promote modifications in the tax code that reflect changing technologies and how products and systems are taxed. Special emphasis should be placed on software and hardware development, as well as digital goods and services that enable the Arizona tax code to remain updated with innovations in the marketplace.





# TRANSPORTATION/ DIGITAL INFRASTRUCTURE

## PRINCIPLE

Arizona citizens benefit from improved safety, enhanced mobility, reduced travel time, and bolstered commercial opportunities through multimodal corridors linking the state to Mexico, Canada, the Intermountain West and neighboring states, particularly California. The corridors should include roadways and telecommunications pathways coupled with rail and energy rights-of-way when appropriate.

There are major gaps and deficiencies in the availability, reliability and affordability of broadband internet connections in society, especially in rural and tribal areas, as well as low-income neighborhoods. Today's dependency on the network while many people still work, interact and learn from home has increased the need of investing in new infrastructure, advanced technology solutions and support services to help close these gaps. Arizona's ability to support and sustain its residents, businesses and institutions while poised for growth depends upon our robust capabilities to connect citizens, businesses and institutions via reliable high-speed broadband.

All Arizona citizens require affordable devices such as computers, tablets and smartphones; digital literacy and digital skills training; quality and available technical support including digital navigator services; as well as access to digital content, applications and other resources and help with cyber safety and security. Substantial federal funds are flowing to digital equity efforts through state block grants and individual grant opportunities that should be leveraged to pursue maximum positive impact with the targeted demographic groups through broad and innovative state and community-based initiatives.

The federal government has invested in transportation-related activities and digital infrastructure at nearly unprecedented levels. Funds distributed through federal COVID-19 relief efforts distributed by the American Rescue Plan Act and Coronavirus Aid, Relief and Economic Security Act (CARES Act) provided initial support for broadband and connectivity deployment. The Infrastructure and Jobs Act (IIJA) then provided funding not only for traditional transportation projects but for mobility technology, such as EV charging, and substantial improvements in broadband and connectivity. A new emphasis on serving unserved and underserved communities, including rural areas, runs throughout IIJA.



Arizona is expected to receive up to \$200 million per year through FY2026 in highway funding. Additional federal grant money is available for major projects, bridges, safety projects and tribal transportation funds. In addition, the Arizona Department of Transportation (ADOT) has used federal funds to complete a plan under the National Electric Vehicle Initiative for EV charging development. The agency received additional funds for deployment and installation of charging facilities. The Arizona Commerce Authority (ACA) has taken a leadership role in broadband development in collaboration with ADOT, allowing additional use of transportation right of way for fiber and small-cell wireless installation. The ACA is expected to be able to draw down an additional \$5 million for continuing broadband efforts.

## POSITIONS

### SUPPORT EMERGING TECHNOLOGIES

Continue to support ACA initiatives such as the Institute of Automated Mobility and Smart State efforts to foster the advancement of Arizona's technology sector and drive the state's position as the leader in these emerging technologies. Advances in 5G, Internet of Things, autonomous vehicles, smart cities, artificial intelligence, distributed ledger technology, augmented reality and rich mobile-content delivery will drive edge-computing deployment and massive growth in data center computational and storage capabilities. Promote policies that encourage the development and growth of new and emerging technologies that further establish Arizona as a global innovator. Support a regulatory environment that provides appropriate safety and protection standards but otherwise reduces regulatory burdens to unleash the power of human creativity and ingenuity.

### ENCOURAGE BROADBAND REGULATORY REFORM AND SUPPORT POLICIES

Remove or reduce barriers generating unnecessary costs or delays and otherwise inhibiting expansion of privately funded, public-private partnership and municipal high-speed broadband infrastructure that meets the needs of all Arizonans. Broadband must not only be available but also robust, redundant and affordable to meet the critical requirements of rural community economic development, business operations, education, workforce needs, citizens' access to services, telemedicine and public safety. Proactively coordinate with government at all levels to ensure

rights of way are readily and affordably available and support fair and predictable government permitting and oversight across jurisdictions to encourage private broadband investment and deployment.

Encourage and support field test opportunities for 5G and other advanced wireless services to help position Arizona as a living lab for these transformative communication technologies. Encourage cities and towns to adopt reasonable engineering standards for shallow depth trenching to allow a more cost-competitive broadband deployment. Continue to ease regulatory burdens and simplify processes for deployment of wireless sites and vertical infrastructure, including micro-cellular transceivers and distributed access systems for necessary densification, considering the ever-increasing need for mobile connectivity, 5G infrastructure demands and other advanced wireless services. To the greatest extent practical, state, regional and local governments should make their current infrastructure of buildings, water tanks, towers and other vertical structures available for utilization by wireless providers at reasonable costs and share an inventory of such assets to aid wireless industry planning and expansion. Overall, the policy for broadband should be pragmatic and recognize its unique economics: high fixed costs, spillover effects and modularity along with rapid technological change. State and local transportation agencies should be funded for the costs of adding broadband-enabling infrastructure such as highway adjacent conduits, as traditional transportation funds cannot normally be used for this purpose.

### LEVERAGE STATE GOVERNMENT BROADBAND PLANNING AND INITIATIVES

Leverage ACA's Statewide Broadband Middle-Mile Strategic Plan to advance a comprehensive statewide broadband strategy and robust oversight mechanisms. Establish a Broadband Development Authority that coordinates and optimizes use of these digital-equity funding resources by Arizona communities, education institutions and nonprofit organizations. Ensure a level playing field for incumbent and new entrant broadband providers and a balanced technology approach favoring fiber deployment where cost-effective and wireless solutions are supported as needed for high-cost areas.

Provide up-to-date state broadband mapping capabilities to track broadband coverage and fiber deployments integrated with crowdsourced speed test data, and demographic and community anchor institution details. Make the data and mapping tools publicly available through the AZGEO Clearinghouse and open sourcing, leveraging them in

Arizona's response to the Federal Communication Commission's (FCC) new maps based on its Broadband Data Collection program driving state allocations and targeted communities of IJA broadband, equity, access and deployment funding.

Help coordinate cross-jurisdictional infrastructure deployments with the Bureau of Land Management, U.S. Forest Service, Bureau of Reclamation and other federal, regional, state and tribal landowners to ensure timely and reasonable planning and permitting processes. Consider additional regulatory reform and incentives that further drive rural broadband deployment by electric cooperatives.

Pursue a minimum broadband download speed goal of 100 megabits per second (Mbps) and at least 20 Mbps upload to guide infrastructure investments and program implementation to the greatest extent practical while considering geography, topography and excessive cost factors. Although the FCC still defines broadband as an internet connection at a speed of 25 Mbps download and 3 Mbps upload, newly funded programs are moving to 100/20 Mbps or even 100/100 Mbps and 1 gigabit per second for community anchor institutions (CAIs) like schools and libraries as their minimum standards to support data intensive applications such as IoT, telemedicine, e-learning and entertainment that will have ever-increasing bandwidth requirements.

Support ADOT in granting private telecommunications companies access to its broadband conduit in a non-exclusive and non-discriminatory manner while creating the Smart Highway Trust Fund to manage leasing revenues. Support ADOT's allowing private service providers to install, operate and maintain telecommunications equipment within ADOT right of ways by the department's authorizing additional fiber and wireless connectivity. Arizona's Smart Highways initiative is funded for building fiber capacity between Flagstaff and Nogales on sections of Interstates 17 and 19 and along Interstate 40 from Flagstaff to the California border. The Broadband Middle-Mile Strategic Plan focuses on open-access, middle-mile fiber deployment, helping refine ADOT's mission and way forward.

Identify funding for deployment of additional fiber along Interstate 40 east of Flagstaff and on and other strategic segments, leveraging the availability of federal and broadband-designated funds for expansion. ADOT is encouraged to develop its business model by engaging a public-private partnership to manage these and other new fiber investments with defined, fundamental principles that should guide the future goals for middle-mile fiber investment and deployment encouraging an

open platform that the Broadband Equity, Access, and Deployment (BEAD) Program allows a wide range of public and private communication uses going forward.

## **LEVERAGE THE ACA'S AND OTHER BROADBAND GRANTS**

Grow ACA's new Broadband Office by empowering it to continue awarding and managing broadband grants to local partnerships and ventures with clear, achievable plans that provide or improve broadband services in unserved and underserved rural areas while also offering community assessments or technical designs, matching funds for grants and specific project implementation investments. With the recapitalization of the ACA's Broadband Grant Fund through the BEAD program and other sources, evolve the program goals and rules focused on providing matching funds to offset planning and construction costs for expanding broadband services and digital equity programs for underserved populations. Adjust internal strategies and resource allocations to optimize their practicality and impact. The state allocated \$23.6 million last year for a new Rural Broadband Accelerated Match Fund to provide matching funds for upcoming BEAD grants. Arizona's \$993 million BEAD allocation will require at least \$248 million in matching funds and the state should add to the Rural Broadband Accelerated Match Fund in future legislative sessions throughout the BEAD program. The state should consider committing ongoing funding for future broadband grant purposes to continue expanding and sustaining the broadband grant program beyond the current surge of generational federal spending.

E-rate has brought in \$1.7 billion since 1998 to Arizona schools, libraries and consortiums toward internet services. While this funding has helped build thousands of miles of fiber to schools and libraries, it would help greatly to leverage this to connect remote rural communities to deploy networks "to and through" the anchor institution and provide low-cost broadband service to communities with unresolved broadband issues. The state allocated \$5 million for E-rate matching funds for additional infrastructure and development benefiting anchor institutions and their surrounding communities and should continue to fund such matching in future sessions. The ACA should act as a clearinghouse to identify and line up complementary broadband grants and other financial support. ACA also should cultivate public-private partnerships working towards an overall broadband infrastructure approach that meets the full range of needs for all rural communities in the most cost-effective

manner, including policies and practices encouraging competition from multiple service providers in each community.

## **EXPAND DIGITAL ACCESS**

Ramp up Digital Equity Act programs in Arizona to support closure of the digital divide and promote equity and digital inclusion through the planning grant, capacity grant and competitive grant phases by partnering with the Digital Equity Institute; state, tribal and public libraries; Arizona Broadband Stakeholder Network (AZBSN); and others to pursue maximum positive impact among targeted demographic groups through broad and innovative community-based initiatives.

Digital access is more than just fast, affordable and reliable broadband. While everyone should have access to low-cost service plans, all Arizona citizens should have other digital requirements met, including affordable devices such as computers, smartphones and home hotspots; digital literacy and digital skills training, along with quality and available technical support; access to digital content, applications and other resources; and help with cybersecurity. CAIs have long been advocating for cybersecurity products and services to be eligible under the E-rate program and this should be expeditiously implemented.

Arizona needs to further develop a robust statewide digital inclusion ecosystem including technical assistance and training for local organizations, community planning; support for nonprofits that are collecting, refurbishing and distributing free or low-cost devices to schools, organizations or directly to families and students; digital literacy tools; cyber safety and security funding; and research for resources for private funding opportunities. Traditionally, the library community has been a strong partner in addressing informal digital literacy educational opportunities, and support for these efforts should be increased as the accessibility issues are addressed through increased broadband deployment. Digital navigators play a key role in helping under-resourced libraries connect their communities with digital literacy upskilling opportunities, and expanded support for established digital navigator programs could be considered to increase the impact of these community resources. A growing number of Arizona libraries offer telemedicine-centered education and equipment to their patrons, and support of this initiative on a statewide level would increase efficacy as well as access. By supporting the existing work of libraries, many aspects of digital equity and inclusion can be leveraged through community outreach and inter-governmental partnerships to create a robust network of resources.

Arizona is creating a digital equity plan as required by the federal Digital Equity Act that will clarify what our state needs beyond infrastructure to advance digital inclusion in vulnerable “covered” populations as defined targets for digital equity funding by the National Telecommunications and Information Administration. The comprehensive plan will be a roadmap to invest in initiatives driven by data collected to provide the most benefit for the covered populations. Arizona will leverage the planning grant, capacity grant and competitive grant opportunities to pursue maximum positive impact with targeted demographic groups through broad and innovative state and community-based initiatives, implementing the most cost-effective solutions as part of a statewide digital inclusion ecosystem.

## **DEEPEN ARIZONA’S COMMUNITY ROLE IN BROADBAND**

Activate and support broadband action teams (BATs) with regional and local stakeholders to encourage and plan for broadband deployment through streamlined and consistent processes for right-of-way use, planning and permitting to align with neighboring and municipal best practices from around the nation. Such BATs should also support digital inclusion planning with localized digital equity plans and initiatives, expanding to be digital inclusion action teams. To achieve common broadband goals, rural leaders should engage all interested parties, including service providers, governments of different jurisdictions, residents, business owners, utility service providers and other key parties to provide maximum leverage of the federal investment. Arizona’s Final Mile Project was funded by the Arizona Department of Education to manage a request-for-proposal process contracting for educational broadband services to students’ homes in 13 rural underserved communities. The state should further invest in the expansion of this innovative program helping drive connectivity.

The Arizona Technology Council recommends AZBSN’s Strategy Report of 2020 to serve as a guide for current and future state broadband strategic planning and that the ACA and AZBSN partner on future community engagement and digital equity initiatives. In addition, the Council supports utilization of the Federal Reserve’s Community Reinvestment Act funding for broadband and digital access remediation where applicable.



## **FOCUS ON CYBER SAFETY AND SECURITY STRATEGY FOR CONSUMERS**

While there is much focus on cybersecurity for enterprises and institutions, cyber safety and security need to play a key role in our digital inclusion strategy for end users. Threat actors are attacking both vulnerable technologies, as well as vulnerable people, therefore cybersecurity focuses on securing the internet and devices while cyber safety focuses on helping people avoid scams, theft, identity theft, misinformation and other deliberate acts. End users such as students, families and seniors receiving connectivity and devices, especially through broadband and digital equity programs, may not be aware of the potential privacy and data risks and require training, resources, tools and support to protect against cyber threats. Arizona needs to develop an ongoing and coordinated strategy and provide additional funding for cyber safety and security initiatives to protect various entities and citizens.

Creating a cybersecurity strategy for digital inclusion can help to ensure that everyone has safe access to digital technologies while also being protected from cyber threats. The strategy may include increasing digital literacy, cyber safety and security programs; providing access to cybersecurity tools and resources; and developing policies to protect against cyber threats with support from multiple organizations. They include the Arizona Department of Homeland Security, Arizona Department of Education, Arizona State Library, Arizona Broadband Office, universities and community colleges, and AZBSN's Digital Inclusion Cyber Safety and Security Alliance.

## **EVOLVE THE ARIZONA CORPORATION COMMISSION (ACC)**

Examine and evolve the ACC's long-standing Arizona Universal Service Fund currently geared only toward legacy telephone support in high-cost areas. Modernizing the fund as many other states have would allow broadband deployment support in similar high-cost circumstances or be programmatically applied as matching funds to community and electric cooperative broadband infrastructure projects.

## **SUPPORT EXPANSION AND RETENTION OF THE DATA CENTER INDUSTRY**

Continue to support and evolve a business-friendly operating environment and economic development programs to further Arizona's data center attractiveness and growth. The advantageous operating environment promotes the retention

and expansion of enterprise and co-location data centers, which has contributed to unprecedented growth in existing and planned data center inventory. Other favorable factors include affordable and robust power with renewable options, excellent weather, a lack of natural disasters, good workforce availability, and diverse broadband access.

## **ADOPT DIGITAL-GOVERNMENT BEST PRACTICES**

Adopt digital-government best practices for internal operations and delivery of citizen services while driving the increased use and adoption of high-capacity digital connectivity and technologies across major application sectors, including education, health care, public safety, e-commerce, e-government, remote work, and mobile enablement. State, local and tribal government should continue to migrate to cloud services and use infrastructure, platform as a service (PaaS) and software as a service (SaaS) offerings to provide staff and operational efficiencies at lower cost while ensuring reasonable cybersecurity and data privacy protections are in place.

## **LEVERAGE NATIONAL PUBLIC SAFETY BROADBAND NETWORK**

Leverage new FirstNet-driven infrastructure improvements, including fiber extensions, tower construction and small-cell deployment to facilitate expansion of broadband for rural communities. FirstNet was approved by all U.S. states and territories and is being built out by AT&T to provide interoperable, wireless public safety communications for first responders. The Council supports policies for cost-effective and timely FirstNet deployment through easing regulatory requirements such as permitting and right-of-way access, as well as broad adoption by public safety agencies to provide extended benefits to rural Arizona.

## **MODERNIZE SURFACE TRANSPORTATION SYSTEMS**

Support modernization of the state's transportation infrastructure to improve mobility, move freight to market faster and advance international trade. The upgraded system should include federal and state funding for Interstate 11 (I-11), which will enhance the state's connectivity by linking Phoenix and Las Vegas. I-11 should be extended south of Phoenix to create an important international freight corridor between Mexico and the Intermountain West. Modernize and add capacity to existing infrastructure through continuous improvements critical to keeping these key corridors fully

functional. Encourage multimodal linkages with rail, telecommunications and energy right of ways and facilities. Modernization should also include technology upgrades to support smart transportation systems and vehicles. Besides additional public funding, Arizona should use a variety of innovative means to provide enhanced infrastructure, including public-private partnerships and other types of alternative finance and delivery.

## RAMP UP TRANSPORTATION FUNDING

Consider a more modern, robust revenue method to support transportation. Arizona is operating its statewide highway system on a declining revenue source: a gas tax that has not been increased in more than 30 years. Particularly hard hit are rural communities, which do not have an adequate tax base to support sales taxes that help fund transportation in urban areas. Since 2013, more than 30 states have enacted some combination of increased gas taxes, taxes to support alternate fueled vehicles, and user fees such as tolls and high-occupancy toll lanes. Arizona lags behind and needs to consider these options to keep pace with the state's growing population and economy. The Legislature provided nearly \$1.8 billion in funding in 2022 and 2023 for specifically identified projects. While these funds are welcome and needed, they are directed to named projects and do not provide the ongoing, reliable funding streams that are needed.

## USE INTELLIGENT TRANSPORTATION

Use intelligent transportation systems (ITS) to help manage surface transportation traffic, maximize existing infrastructure and minimize congestion and incidents. The general lack of ongoing transportation funding will limit Arizona's opportunity to take maximum advantage of these new and improving technologies since funds to support ITS are generally from the same revenue streams as those that fund construction and rehabilitation of infrastructure.

## ELEVATE TRANSIT AND MOBILITY

Support transit systems and development to enrich the quality of life for Arizona residents and visitors, reduce traffic congestion, improve air quality, and provide enhanced workforce mobility. Alternative mobility assets such as bike-share facilities and bicycle infrastructure are helpful in providing a robust urban transportation

system. Transit continues to be a critical component of a robust transportation system and needs to be financially supported by both state and federal revenue sources.

## SUPPORT VEHICULAR TECHNOLOGIES

Continue to support a flexible and competitive environment for the testing and deployment of autonomous automobiles and other vehicular technologies in the state—particularly the Institute of Automated Mobility—to help make roads safer, increase mobility and establish Arizona as a test bed and commercialization launchpad for many emerging technologies.

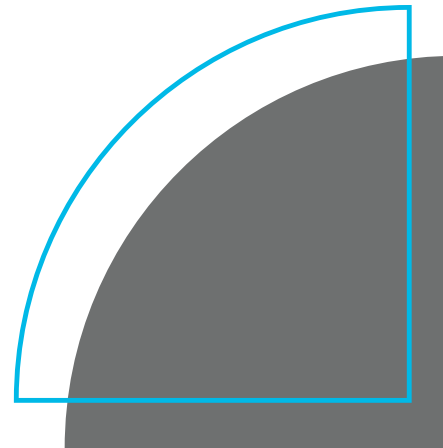
## INVEST IN ARIZONA'S PORTS OF ENTRY

Focus on encouraging both infrastructure investments and process improvement for Arizona's ports of entry along the southern border to better enable and optimize commercial transportation logistics. Despite being critical links, the ports of entry are frequent bottlenecks for smooth and timely logistics of cross-border transportation of goods. Recent federal initiatives have expanded funding for ports of entry. Thanks to Arizona's border planning efforts and collaborative border-wide approach to funding, the state's ports are well represented on the federal priority list. To continue to motivate federal support, the state should:

- » **Leverage the IIJA** – Leverage the Infrastructure Investment and Jobs Act for funding.
- » **Identify Targeted Funding** – Identify funding streams to support the development and modernization of border infrastructure, particularly at our ports of entry. While there is a big push for the Donations Acceptance Program to support infrastructure needs at ports of entry, it is structured so U.S. Customs and Border Protection simply receives the contributions and excuses the federal government from its responsibilities at the border. The program should be more of a public-private partnership, not necessarily focused on donations or a fee structure, which can discriminate against smaller ports in smaller communities.
- » **Focus on Additional Staffing** – Fulfill the need for additional staffing desperately needed at ports of entry. For Arizona, that means a full-time equivalent vacancy rate of 20%, or approximately 250 funded positions. U.S. Customs and Border Protection is unable to fill positions due to a burdensome vetting process and a polygraph test exceeding the standards of the U.S. Drug Enforcement Administration, CIA and FBI. It is impossible to ask for new

positions until the current vacancies are filled. Support and promote efforts such as the Border Jobs for Veterans Act, which has created a mechanism for the military to transition into these enforcement jobs.

- » **Recognize Ports of Entry as Assets** – Recognize the U.S. border and ports of entry as valuable assets essential to the national and North American economies. Attention to the border as an economic engine provides the opportunity for investment, job creation and economic security. With supply chain disruptions, the concept of nearshoring supply chain components within North America will continue to gain traction. Ports of entry and supporting infrastructure are critical for the national and Arizona economies.
- » **Make Process Improvements** – Continue to improve processes related to commercial carriers. For example, Unified Cargo Processing, which enables U.S. and Mexican customs inspectors to work side by side on the inspections process, has revolutionized the border. Launched in Arizona, the joint inspection program has drastically reduced the time it takes to cross the border. Similar improvements, such as more collaborative truck inspections processes between ADOT and federal authorities, can reduce the need for physical infrastructure and improve crossing times.
- » **Conduct Long-Term Planning** – Work with the Office of the Governor and Legislature, as well as other key stakeholders, to develop long-term improvements in transportation funding, including consideration of fuel tax, license renewal fees, locally generated sales tax initiatives, public-private partnerships and other components of a funding package. Arizona should continue to regularly update the border master plan, which is used by both state and federal funding agencies to prioritize funding. The process also encourages unified border-wide support for priority projects.
- » **Support International Trade Transportation** – Continue to support state and local facilities leading to and from the ports of entry so roads do not become bottlenecks for cross-border trade. The U.S. Department of Transportation should reinstate a separate pool of funds for the Coordinated Border Infrastructure program, a small pool of funds for border-related infrastructure. Without those funds, Arizona and other border states must use their own limited funds while supporting trade from Mexico and Canada, much of which simply passes through the border states and benefits the economies of states far from the border. Ports of entry and related infrastructure should be recognized as national assets.







# UNIVERSITIES AND HIGHER EDUCATION

## PRINCIPLE

The Arizona Technology Council actively works to support Arizona's universities—Arizona State University (ASU), The University of Arizona (UArizona) and Northern Arizona University (NAU)—and improve the technology infrastructure upon which they rely. The Council's members and the state rely heavily upon Arizona's universities and community colleges to provide a highly skilled and talented workforce. In addition, the universities provide a world-class platform for research and development, which can be translated into commercial opportunities that include the transfer of technology to Arizona's private sector. The universities engage the communities throughout the state and rely upon technology to provide education, research and other valuable community services.

## POSITIONS

### STABLE FUNDING, ENHANCED FLEXIBILITY

Collaborate with the Arizona Board of Regents (ABOR) and the public universities to build upon the existing strengths of the university system and ensure world-class research capabilities, access for qualified students and excellent workforce preparation. Support the universities' budget requests and legislative priorities, secure the state's financial relationship with the university system and obtain support for critical capital.

### EXPAND AZ HEALTHY TOMORROW

Arizona faces a critical shortage of health care professionals and numerous health care disparities. The AZ Health Tomorrow initiative involves the coordinated expansion of health care education across the three state universities to address persistent and projected healthcare workforce needs in Arizona. This initiative includes expansion of UArizona's schools of medicine in Tucson and Phoenix with the aim of doubling the number of medical students at each college within five years; establishment of Arizona State University Health, which will include a school of medicine and advanced medical engineering, a school of public health technology and a health observatory that will leverage ASU's engineering expertise and complement existing programs in nursing and public health; and expansion of NAU's allied health offerings to address key workforce needs.

## SUPPORT ARIZONA PROMISE PROGRAM

Support the expansion of the Arizona Promise Program to fully fund need-based aid for the eligible student population, providing direct financial relief to Arizona students and families. The expansion proposed by ABOR would compare favorably to other states that operate mature, stable Promise programs, ensuring access to opportunities in higher education for all residents.

## FUND ARIZONA TEACHERS ACADEMY

Support maintaining funding for the Arizona Teachers Academy in an ongoing manner to sustain programmatic funding that develops more and better-qualified educators in Arizona without financial burden.

## INVEST IN WORKFORCE DEVELOPMENT

Support Arizona public universities' workforce initiatives that invest in the development of skilled Arizona workers and enhanced economic opportunity. These initiatives leverage the universities' existing strengths to address critical workforce shortages and solve challenges in national defense, cybersecurity, health care, sciences/STEM and engineering.

## SUPPORT TRI-UNIVERSITY DIGITAL EQUITY INITIATIVES

Support Arizona's three state universities' taking up the cause of digital equity and developing a variety of outreach experiences, stakeholder engagements, innovative initiatives, and grant-funded opportunities for research and proof-of-concept projects connecting the underserved and advancing community infrastructure. ASU's Lighting Up the Future has been cooperating with the other universities, the Arizona Commerce Authority, Sun Corridor Network, the Institute for Digital Progress, and the Digital Equity Institute among others, building a coalition to address digital equity challenges.

## PRIORITIZE ENTERPRISE MODEL

Support an enterprise model of operations, which recognizes and advances each university and its differentiated mission. Allow the university system to negotiate its own health benefits to ensure it is only paying proportionally for its share of the state benefits plan.



## ENABLE SUN CORRIDOR NETWORK

Encourage policies to enable the Sun Corridor Network (SCN), the Arizona universities' research and education collaborative network, to flourish and expand services to a broader base of users. A robust SCN enables discovery, innovation and research outcomes among postsecondary researchers and educators. This infrastructure is critical to attracting world-class researchers and research funding to Arizona. A future-proofed P-20 education technology infrastructure is essential to enable modern digital-learning technologies and methods necessary for a workforce equipped for the knowledge-based economy. The Arizona Department of Education is currently limited in its ability to partner with SCN due to it being a provider (i.e., vendor)



in E-rate transactions with schools and districts. We encourage the department to explore avenues for partnership with SCN, possibly transitioning from provider to statewide consortium lead requiring one-time financial support to seed the transition to a consortium lead and shared service provider. SCN with its expertise in building and managing public-sector focused broadband networks should explore a broader mission to include providing cost-effective broadband infrastructure and services for low-income and rural communities as well as consulting on new community and municipal broadband networks. SCN should undertake a strategic planning process and explore the feasibility of creating a statewide nonprofit consortium with the Arizona Department of Education, the Arizona State Library, the Arizona Broadband Office, and other local and state organizations to develop a statewide network to connect and support the universities, community colleges, nonprofit organizations, health care organizations, local communities, and others. Direct partnerships between SCN and schools and libraries can be a challenge today as SCN is a provider in E-rate transactions and a consortium with potential state funding may be a strategy to overcome this barrier.

Support the network's public-private partnership strategy to bring high-bandwidth access to Internet2—the national education/research network and community—and the commercial internet to the Arizona P-20 community. Support the network's participation in Arizona Department of Transportation's investment in highway-corridor fiber deployments and their anticipated public-private partnerships to grow and manage a robust state network. This will lead to the improvement of rural broadband network capacity and availability across the region, as well as improved regional research collaborations. Successful rollout of these strategies will enable the network and its member universities—ASU, UArizona and NAU—to bring better and lower-cost internet and Internet2 by leveraging economies of scale and shared infrastructure while driving better broadband availability for all. Support the network's National Science Foundation grant-funded efforts to interconnect Arizona's community colleges in support of joint science-research drivers and STEM education initiatives. Support SCN's efforts in expanding eduroam as a solution that enables authorized users on specific educational, library and public space wireless networks to roam with their existing credentials onto a great, cooperative collection of such networks, boosting the value proposition of all the institutional infrastructure investments being made in these networks.





# ARIZONA TECHNOLOGY COUNCIL LEGISLATIVE PRIORITIES – 2024

- » Support the reauthorization of the Arizona Commerce Authority.
- » Support economic development programs that have proven to work for Arizona. Maintain and fund programs that support manufacturing; encourage research and development; support high-quality, high-paying jobs; and incentivize innovation. Ensure these programs are continued and additional restrictions are not applied that would hamper the economic growth and success Arizona has experienced. During the past several years, the Council has been successful in helping extend and expand these programs. Some economic development tools may need to be modernized to ensure the most effective utilization of tools that continue to spur economic growth.
- » Develop a phased-in option for students to enroll in a computer science course offered by their school or an online course approved by the Arizona Department of Education. For high school ages, the course should be a standalone computer science course and for younger grades, computer science principles should be incorporated into a general education course. Support funding for the computer science courses and accompanying teacher development to support this program.
- » Seek opportunities and measure their progress to positively impact the diversity, equity and inclusion of the workforce and its leadership, and grant equitable access to essential services (e.g., broadband, transportation, employment, education opportunities).
- » Work collaboratively with both the Arizona Corporation Commission (ACC) and the Legislature to advance energy policy that encourages demand-side adoption of energy efficiency, prioritizes clean and renewable energy use, invests in electric vehicle infrastructure development, and supports innovation in the industry. Protect against attempts to undercut the authority of the ACC to promulgate and implement clean energy policies.
- » Look for opportunities to expand Arizona's science, technology, engineering and math (STEM) education, including computer sciences and coding opportunities for students. Focus on long-term, shared, sustainable and flexible STEM missions that bridge, integrate and strengthen the learning opportunities offered by organizations across sectors instead of isolated, independent entities. STEM education helps prepare our students for the jobs of not only today but of the future and will build a strong, diverse talent pipeline to meet the state's continued growth.





**ARIZONA  
TECHNOLOGY  
COUNCIL**  
a place to connect and grow



# 2024

PUBLIC POLICY GUIDE



## Federal Policies and Positions





# Artificial Intelligence

## PRINCIPLE

Artificial intelligence (AI), computerized systems that perform tasks we normally associate with people, is science fiction no more. It is commonplace—think talk-to-text, web searches, photo tagging or fraud detection—growing and becoming increasingly more sophisticated.

Among the various facets of AI, “generative” AI has captivated the global population over the past year, largely due to OpenAI’s tool called ChatGPT. This revolutionary technology empowers computers to swiftly generate vast volumes of text, art and sound on virtually any subject or in any style. What’s more, it can adapt the output based on user instructions. Consequently, it stands as the fastest-adopted new technology in history.

Unlike its predecessors, which often remained exclusive, inaccessible and costly, this technology is open to anyone with access to the public internet and to some extent is available for free. The technology’s growth has been underpinned by an open-source licensing model and collaborative experimentation. This has led to an array of tools that aid tasks traditionally handled by humans in an explosion of innovation reminiscent of the Cambrian era.

While concerns about job displacement are valid, others hold an optimistic view, anticipating the emergence of new roles. The net impact on job numbers remains uncertain and will take years to unfold. Nonetheless, one thing is evident: Attempts to hinder or rigidly regulate this technology’s economic implications are destined to fail. Hence, the Arizona Technology Council advocates for a cautious yet unambiguous approach to legislating AI. Unlike prior technological leaps, excessive regulation or uncertainty could yield substantial economic and societal consequences, particularly if new regulations prove unenforceable by current or future technology.

AI’s potential applications extend to addressing some of society’s most pressing issues, from enhancing driving safety and improving medical diagnoses to combating human trafficking and thwarting cyberattacks. New solutions can include unleashing scientific discoveries, boosting agricultural yields, optimizing investments and preventing injuries among athletes. Furthermore, AI can enhance human capabilities, spurring economic advancement through increased productivity and improved outcomes.

Nevertheless, the rise of AI brings forth ethical dilemmas related to privacy, potential biases, liability and decision-making processes. As automation gradually encompasses various job categories, it will prompt transformative shifts in both lifestyles and work patterns. This shift will elevate knowledge-based work as routine human tasks are automated. To harness AI’s benefits while mitigating negative

repercussions, governments should pursue policies that foster AI development, safeguard individual rights and address the consequences of heightened automation.

## POSITIONS

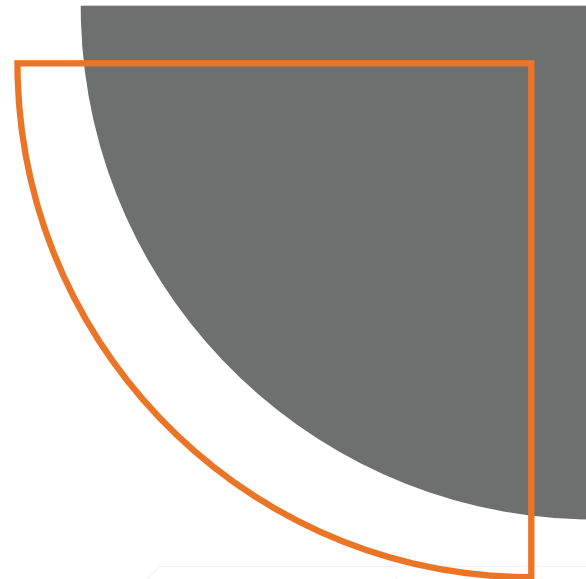
### SUPPORT ARIZONA AI INNOVATION AND GROWTH

To better understand the impact of AI and explore the broad diversity of its implementations, public policy should encourage investment in AI research and development and the open sharing of its results. Governments should support the controlled testing of AI systems to help industry, academia and other stakeholders improve the technology.

- » **Fuel AI innovation** – Develop an Arizona AI Innovation Network of startups, scaleups, researchers and investors, and have the state facilitate matchmaking, grants and partnerships.
- » **Address Global Societal Challenges** – Support AI-powered initiatives that seek solutions to the world's greatest challenges, such as curing cancer, ensuring food security, controlling or mitigating climate change, and achieving inclusive economic growth.
- » **Allow for Experimentation** – Create the conditions necessary for controlled testing and experimentation of AI in the real world, such as designating self-driving test sites in cities and enabling pilot programs in live environments with relaxed regulatory burdens.
- » **Leverage Arizona Tech Sector** – Support the launch of AI startups through incubation programs that link industry, higher education, the tech community and other stakeholders to translate research into new companies.
- » **Promote Data Accessibility** – Create data-sharing frameworks so companies can provide access to data for academic research and public sector projects in privacy-preserving ways.

### PREPARE ECOSYSTEM AND WORKFORCE

AI will change the way people work. Policies should support adding skills to the workforce and promoting employment across different sectors that enhance employment opportunities while also protecting people's welfare.



- » **Build Understanding** – The public does not broadly understand what AI is, how it works, its value to the economy, or its implications. Programs that address the communication gap in AI are needed for AI’s potential to be realized.
- » **Encourage Human Employment** – Implement programs to mitigate AI’s impact on jobs and devise policies that promote employment. These programs should particularly focus on the effectiveness of incentives in government-funded infrastructure projects.
- » **Prepare a Workforce for AI** – Provide incentives for students to pursue courses of study that will allow them to create the next generation of AI and for institutions to offer such programs. The Council supports higher education delivering programs and curriculum on AI ethics, skills and public policy.
- » **Retrain** – Implement policies, including apprenticeships, that support the training and reskilling of an AI workforce. This is particularly true in job areas that are less likely to be automated, such as positions focused on person-to-person interaction and human judgment, as well as positions that require guided computation in which individuals direct and oversee the operation of the technology.
- » **Create Public-Private Partnerships** – Provide support for joint AI research projects between universities and companies that align with Arizona’s priorities such as applications that address public sector challenges like health, transportation and public safety.
- » **Enhance Productivity** – To unlock AI’s productivity potential, upskilling the workforce is key. By seamlessly integrating AI tools into daily tasks, employees enhance efficiency and contribute insights for operational excellence. Tailored training, ongoing support and adaptability to evolving AI tech are essential for sustained benefits.

## PROMOTE ETHICAL AND RESPONSIBLE AI

AI is powered by access to data. Machine learning algorithms improve by monitoring results and analyzing more data over time. Data access is imperative to achieving more enhanced AI model development and training and open access to shared large repositories of collected data where appropriate. Removing barriers to the access of data will help machine learning and deep learning reach their full potential.

- » **Prioritize Transparency** – Contribute to the development of expectations for accountability and clarity regarding sources of data used by AI and the content it generates.
- » **Align with Industry Trends** – Align policies and approaches to national and international best practices regarding ethics, risk, accountability and transparency during the development and application of AI.
- » **Build on Arizona AI Ecosystem Best Practices** – Arizona has a robust AI ecosystem. Policies for AI accountability, safety, privacy, ethics and transparency should build and expand on the work done by the Arizona AI community.
- » **Develop Responsible Data Use** – Collaborate within the ecosystem to develop responsible and clearly delimited data-use policies that acknowledge the complexities of multinational organizations’ work while respecting the various data laws in place globally.

## DEVELOP LAWS AND FRAMEWORKS

Lawmakers are recognizing public concerns about AI and the reality that while this new technology possesses opportunity in its applications, there is also the potential to violate rights and inflict harm. The Council offers lawmakers and the technology community the following guidance as they work to establish norms for AI:

- » **Create Flexible Rules** – AI laws and frameworks should recognize that this technology is rapidly evolving, and its implications are not yet fully understood. As such, any rules developed during upcoming years should allow the U.S. to begin setting expectations for responsible AI use and development. AI rules should also be sufficiently flexible in their language to accommodate directions that this technology takes and what the community learns from its usage.
- » **Protect the Rights of Content Creators** – Generative AI presents a new practice of creating content based upon the vast works of others. The benefits of generative AI became widespread during 2023. With this, content creators including authors, graphic artists, musicians and news sources have concerns about rights to, attribution, permission and compensation for their works. Legal frameworks and best practices on how to navigate this topic do not yet exist. To address this need, the Council advocates for discussion, awareness and ultimately learning within the community on this topic.
- » **Promote Voluntary Industry Accountability** – Consistent with approaches of the Biden administration, the Council supports voluntary efforts by members



of the AI industry to establish best practices for the responsible, safe and legal use of AI.

- » **Create Frameworks that Acknowledge Different Types of AI** – AI technologies exist in various types and with these are differing levels of concerns for safety, protection of rights and risk to the community. The Council supports frameworks that consider the different types of AI when determining how to regulate this technology. An example of where to begin such a framework is the European Union's AI Act, a piece of legislation that differentiates AI by low risk, high risk and unacceptable risk. The EU also places requirements on generative AIs regarding transparency and illegal intellectual property infringements.
- » **Demand Transparency** – Individuals having a clear understanding about AI sourcing content they are consuming is key to public trust in AI. The Council advocates for frameworks and regulations that require AI-generated content to be visibly and plainly identified.
- » **Prepare Arizona** – Perform AI impact assessments for state and local government AI systems to evaluate benefits and risks.

- » **Create an Advisory Council on AI** – The Advisory Council would inform AI policies across sectors and provide guidance in ways that parallel similar councils in Maryland, Connecticut and Vermont. The Advisory Council would be comprised of government, industry, academic and citizen representatives. It would operate with a mandate to conduct studies and provide policy recommendations on AI's impacts and opportunities across different sectors and serve as a resource for state agencies as they propose rules or policies related to AI.
- » **Protect Citizens** – The Arizona Technology Council encourages the development of laws that give citizens recourse if harmed by algorithmic discrimination and outline protections against invasive surveillance.

## ENCOURAGE RESPONSIBLE DESIGN AND IMPLEMENTATION

The social implications of computing have grown and will continue to expand as more people have access to implementations of AI. Public policy should work to identify and mitigate discrimination caused by using AI and encourage adding protections against these harms.

- » **Hold AI Accountable** – Governments, industry and academia should apply the Information Accountability Foundation's principles to AI. Organizations implementing AI solutions should be able to demonstrate to regulators that they have the right processes, policies and resources in place to meet those principles.
- » **Develop Standards** – The Council supports industries and government working together to develop AI standards that are clear, evolving and actionable.
- » **Implement Privacy by Design** – The Council supports activities that keep stakeholders and developers informed about evolving best practices to implement Privacy by Design into AI products and tools.
- » **Support the Creation of Reliable Datasets to Test Algorithms** – Explore non-regulatory methods to encourage the development of testing datasets and protocols.





# Cybersecurity

## PRINCIPLE

Virtually every facet of Americans' daily lives is facilitated by technology. We communicate, shop, travel and work through globally connected systems that are increasingly vulnerable to cyberattacks. This spike in cyberattacks—particularly nation state-sponsored attacks that simultaneously impact multiple systems—is prompting a growing body of federal policies to promote cyber readiness, modernize government infrastructure, and monitor and respond to cyber incidents. “Security-by-design” and “security-by-default” are just a few examples of the myriad federal approaches to cyber resilience.

The 2023 National Cybersecurity Strategy proposed sweeping reforms to critical infrastructure security, software development, international engagement and future cyber resilience. Likewise, there is increased focus on shifting liability to software and hardware vendors that fail to build cybersecurity into their solutions, along with continued workforce development and education initiatives. In fact, the White House has launched new efforts to strengthen America's K-12 schools' cybersecurity in coordination with the Education and Homeland Security departments.

The Arizona Technology Council supports federal policies that promote public-private collaboration and incentivize a proactive, risk based approach to cybersecurity. We support frameworks that help entities efficiently identify, manage and communicate risk to foster a more resilient cyber ecosystem. We encourage federal lawmakers to adopt clear, efficient and cost-effective policies that do not stifle innovation or unnecessarily burden the private sector, particularly small and medium-sized businesses.

## POSITIONS

### IMPLEMENT UNIFORM, SIMPLIFIED CYBER INCIDENT NOTIFICATION

The Cyber Incident Reporting for Critical Infrastructure Act of 2022, signed into law on March 15, 2022, proposes the first-of-its-kind reporting mandate for America's critical infrastructure. While the country awaits the rulemaking implementing this law in fall 2025, a growing number of federal agencies are adopting redundant or even conflicting reporting requirements for American businesses. This patchwork of federal reporting mandates has the potential to undermine their very purpose: real-time, actionable cyber intelligence. The government, businesses and consumers should be provided accurate, reliable information to promptly and effectively prevent or respond to a cyber

threat. The Council calls on Congress and the administration to Streamline and harmonize the multiple federal reporting requirements. With the Department of Homeland Security's preliminary regulations required to be published in the Federal Register no later than next spring and final regulations to be published no later than 18 months later, this activity requires close monitoring and proactive input in the promulgation of the regulations.

## EXPAND CYBER EDUCATION AND WORKFORCE

As of April 2023, there are an estimated 750,000 open cybersecurity jobs across the U.S., despite a cyberattack occurring every 39 seconds on average. America's cyber future is dependent upon a high-skilled workforce and preparing this future workforce must begin in America's elementary schools. The Council is dedicated to closing the cyber talent gap and supports federal initiatives, including the 2023 National Cyber Workforce and Education Strategy to equip our educators with the tools to inspire our future cybersecurity experts and to meet the demands of one of the fastest growing and most critical industries in the U.S.

## ENSURE SUPPLY CHAIN SECURITY

The Council supports federal government efforts to enhance the security and reliability of software, firmware and hardware supply chains through open and transparent partnership with the private sector.

- » **Develop Policies for Objective Assessment** – Focus on coordinated, whole of government efforts to develop clearly defined policies and standards for objectively assessing supply chain risk and security.
- » **Encourage Public and Private Sector Collaboration** – Expand on the National Telecommunications and Information Administration's work with industry stakeholders to produce a Software Bill of Materials that promotes supply chain transparency and reduces risk.
- » **Expand Task Force Action** – Support the Federal Acquisition Security Council/ Department of Homeland Security's Information and Communications Technology Supply Chain Risk Management Task Force.
- » **Put Policy in Action** – Craft and pass legislation (e.g., United States 5G Leadership Act of 2019) that preserves national security while spurring innovation in a globalized economy.

- » **Refine While Measuring Impact** – Work to transparently refine and adopt the Department of Defense's Cybersecurity Maturity Model Certification program while continuing to track, assess and spread awareness of its impact on Arizona's defense industrial base.

## FOCUS ON INTERNET OF THINGS (IOT) CYBERSECURITY

The Council supports the development of a flexible, stackable baseline of IoT security requirements to be built upon and tailored to fit individual ecosystem needs and evolve as technology progresses. This will happen through:

- » Development of the National Institute of Standards and Technology (NIST) Core Cybersecurity Feature Baseline for Securable IoT Devices (NISTIR 8259) and C2 Consensus on IoT Security Baseline Capabilities.
- » Coordination with the Federal Trade Commission to deem conformance with the NIST baseline presumptively reasonable.
- » International harmonization of IoT security practices.

## SUPPORT DEPLOYMENT OF 5G SECURITY

The Council supports rapid deployment of 5G infrastructure utilizing trusted sources of supply. Key focus areas are:

- » Certified Information Systems Auditor strategic risk management.
- » Communications Security, Reliability and Interoperability Council guidance on network security and reliability.
- » National Security Telecommunications Advisory Committee 5G and supply chain.





# Energy

## PRINCIPLE

The link between technology investment and energy is fundamental and unbreakable. To attract investment capital and retain and grow its technology business sector, the United States needs predictable and investable energy markets that ensure affordability, grid reliability and energy security while enabling companies to meet internal sustainability goals. Additionally, the country needs a secure and adequate water supply. Every key American technology cluster shares these needs. Policy and legislative choices that enable market forces to improve the status quo have historically been favored. There are several attractive policy options that would benefit businesses, job creation and economic productivity.

Transitioning to low-carbon technologies would provide the ideal landscape for companies and utilities to meet their sustainability goals. A growing number of companies are setting goals to source 100% renewable energy for their facilities and reduce their carbon footprint. Access to cost-effective, low-carbon or carbon-free energy resources is an important factor for companies as they consider where to make future investments.

## POSITIONS

### CLEAN HYDROGEN DEVELOPMENT

Support the development of clean regional hydrogen hubs and continued federal investments in hydrogen and fuel-cell technologies and related research and development. The Infrastructure Investment and Jobs Act identified \$9.5 billion for federal investment in hydrogen-related programs and the Inflation Reduction Act further identified energy and climate-related tax credits, as well as additional funding of programs across agencies that positively impact upstream, mid-stream and downstream applications related to the development of a national hydrogen marketplace. The United States has an opportunity to establish itself as a leader in the global hydrogen economy. Hydrogen offers a unique solution to drive deep emissions reductions in energy-intensive, hard-to-decarbonize sectors, including shipping, aviation and industrial applications like steel manufacturing. Hydrogen and fuel cells can help reinforce clean-energy grids by providing long-term energy storage options and offering dependable, cost-effective backup power. Hydrogen energy and fuel cells can also enhance energy security in the transportation sector, reducing petroleum imports and supplying a dependable, domestically produced source of energy.



# Financial Technology (Fintech)

## PRINCIPLE

Distributed ledger technology (DLT), otherwise known as blockchain, is perhaps the most talked about yet most misunderstood emerging technology in the world today. Since its inception, secure DLT has been widely viewed through the lens of virtual currencies, particularly the hype surrounding the buying and trading of bitcoin and other digital coin offerings. Indeed, surveys have shown that consumers are largely aware of what bitcoin is but do not know about or understand the impact of fintech advances and the blockchain technology that powers it.

Blockchain has the potential to revolutionize many sectors of the U.S. economy if the proper legislative and regulatory measures are taken to enable and foster its development, correcting the ineffective and confusing patchwork of policies. Today's patchwork system of divergent laws and regulations is unsuitable for this diverse and fast-evolving industry in need of a comprehensive regulatory approach. The technology brings significant efficiencies to not only currency and financial transactions but also asset ledgers, global supply chains, Internet of Things (IoT) data collection and decentralized social networking.

## POSITIONS

The Arizona Technology Council suggests federal policymakers consider developing policies and regulatory structures for fintech and blockchain environments that encourage developers and market participants to continue innovating and providing solutions that will aid the public sector in achieving its mission and goals. To do so, policymakers should understand the promise, uses and questions that blockchain currently presents. The Council supports:

- » **Securities Law Clarification** – The linchpin for tokenized projects in the United States is the application of federal securities law to token sales. Initial coin offerings (ICOs) have arisen as forms of crowdfunding for blockchain projects through the sale of digital tokens, many without adherence to federal securities law. However, if conducted properly, they are legitimate forms of crowdfunding. Additionally, not all initial token sales are ICOs but merely a means of getting a new good or service to market. Unfortunately, the U.S. Securities and Exchange Commission's (SEC) framework for investment contract analysis of digital assets does little to clarify the circumstances in which a token sale will be treated as a security offering. While some in Congress have recognized that our antiquated securities laws simply do not fit the modern-day use of digital assets, little has been done to provide the statutory clarity the industry is desperately seeking. In the absence of such clarity, many innovators have left U.S. markets to launch their projects overseas. Congress, the SEC and other financial regulators should work with stakeholders to create a responsible framework for regulating ICOs and non-security token sales.



- » **Multi-Agency Coordination and Regulatory Alignment** – In accordance with the Government Accountability Office report “Blockchain in Finance: Legislative and Regulatory Actions Needed” (2023), the multitude of federal agencies involved in fintech regulation should jointly establish or adapt an existing formal coordination mechanism for collectively identifying risks posed by blockchain-related products and services and formulating a timely regulatory response including the Federal Reserve System, Federal Deposit Insurance Corporation, SEC, Comptroller of the Currency (OCC), National Credit Union Administration, Commodity Futures Trading Commission, and Consumer Financial Protection Bureau.
- » **Digital Currencies** – Often associated with blockchain and DLT, digital currencies are entering a new and heightened era of importance exhibiting properties like traditional currencies, but generally not having a classical physical form of fiat currency. The risks and benefits of establishing any centralized government digital currencies must be carefully weighed. A related and rapidly developing realm called decentralized finance (DeFi) is experiencing an organic and global wave of innovation that introduces advantageous alternatives to almost every form of legacy financial instrument. DeFi is supplanting more centralized fintech with institutional and retail investors likely to use whatever platform is offering the greatest variety of services and assets. Because DeFi innovation is driving powerful and fundamental shifts in the foundations of the global economy, it is important that federal policymakers continue to innovate with regulation and legislation that adjust to this new world of digital assets to prevent losing relevance and competitiveness.
- » **Decentralized Web (DWeb)** – The decentralized web proposes the reorganization of the internet to remove centralized data hosting services, using instead a peer-to-peer infrastructure due to content constraints and lack of trust with the current internet. Traditional platforms are being disrupted and disintermediated, opening the possibility of a world in which people can own their data and grant applications permission to use it on a limited basis rather than having that data scattered across hundreds of centralized databases. Decentralized identity as an open, standards-based identity framework using digital identifiers and verifiable credentials that are self-owned and independent and enable trusted data exchange should be enabled and adopted for end-user control, privacy and security reasons. The federal government itself and in concert with international

organizations should work to adjust regulatory paradigms to encourage DWeb development and adoption, driving progress, opportunity and inclusion.

- » **Non-Fungible Tokens** – A new and dynamic method of creating property rights known as non-fungible tokens (NFTs) has emerged and grown rapidly in popularity. NFTs are being applied to digital art, sports, real estate, documents and other forms of unique assets. They are created on blockchains and traded on various cryptocurrency exchanges, representing powerful versatility within the formerly static realm of asset ownership. While NFTs are still in their infancy, they represent an innovative alternative to traditional forms of property ownership and are challenging to regulate with legacy policies. Congress and federal regulators should evolve updated and innovative ways to blend NFTs into legacy approaches to property rights through an approach that encourages entrepreneurial innovation while recognizing and fostering this new tokenization of assets.
- » **Regulatory Clarity Regarding Custody** – The SEC, OCC and state regulators each have differing custodial requirements for digital assets and often offer conflicting guidance that becomes subject to jurisdictional battles. Providing increasing clarity on how existing custody rules apply to digital assets while allowing the traditional, regulated financial system to interact with digital assets will provide a safer arena for users to navigate the digital asset ecosystem. Customers should have the choice to hold digital assets with exchanges, regulated banks or broker-dealers. Yet, traditional U.S. custodians are reluctant to offer digital asset services due to unclear regulatory approval requirements. Additionally, the SEC has made it financially unworkable to hold digital assets by requiring custodians to hold an equal asset on the balance sheet as a liability. Congress should require the SEC to rescind the requirement in favor of a notice and comment rulemaking and regulators should provide clear custody guidance for incumbent and entrant providers.
- » **Self-Custody** – The freedom of self-custody through a self-hosted wallet plays an important role, allowing users to preserve financial privacy and to securely store their assets without threat of loss from the security breakdown of a third-party custodian though with some higher degree of risk. Policymakers should ensure that the option to self-custody is not infringed and that federal agencies are kept from promulgating rules that would impair a person's ability to act as a self-custodian. Policymakers and industry should partner on educational outreach to ensure self-custody risks and benefits are thoroughly understood.



» **Regulatory Sandboxes** – Following on the heels of Arizona's groundbreaking Fintech Regulatory Sandbox, regulatory sandbox proposals have been introduced or enacted in more than a dozen states. In addition, the Consumer Fraud Protection Bureau launched a sandbox for businesses subject to its regulations and the District of Columbia established the Financial Services Regulatory Sandbox and Innovation Council. The Council encourages additional federal blockchain and emerging technology regulatory sandboxes to reduce barriers to technological innovation and create an agile environment for the testing and offering of fintech and blockchain applications. By fostering innovation, the United States can keep pace in dynamic international markets and develop many new use cases. Federal agencies should issue broad regulatory waivers for state sandbox participants and exemptions for transactions occurring within state regulatory sandboxes, exerting a light regulatory touch on nascent state blockchain initiatives. We also encourage adoption of an agency-wide federal sandbox so innovators can take full advantage of this testing model nationally and internationally, ensuring legal and regulatory reciprocity between participating jurisdictions.

» **A Federal Blockchain Stakeholders Working Group** – The Council, along with a broad coalition of national, state and regional technology councils, strongly support the reforms codified in the Blockchain Promotion Act of 2019 and urge Congress to pass this or similar important legislation directing the Department of Commerce to establish a blockchain working group that recommends a consensus-based definition and regulatory framework for the technology. The working group should develop specific recommendations for the National Telecommunications and Information Administration and Federal Communications Commission to examine marketplace opportunities; support current and future security requirements, standards and interoperability; explore the potential impact of blockchain on spectrum policy; and promote the adoption of blockchain to promote efficiencies within the federal government.

» **Federal Government Records** – Federal agencies and Congress should examine utilizing blockchain for the management and storage of government records for cost, efficiency and security considerations. Trials and pilots should be initiated to develop capabilities, gauge future direction and, when appropriate, inaugurate full-scale initiatives.





# Privacy/Data Breach Notification

## PRINCIPLE

Economic expansion in technology rests on the creation of new and innovative business models that leverage trusted, secure and accessible internet-based platforms. Data policies should promote responsible use of consumer data so the technology experience can continue to expand and improve.

There is currently no national standard for how a company must notify its customers in the wake of a data breach. Instead, companies must navigate a complex web of 50 different, often conflicting and regularly changing notification laws for each state in the aftermath of a breach plus additional laws for U.S. territories. This difficulty is compounded by data breach notification requirements under the laws in other parts of the world that assert global jurisdiction to protect the data of their residents. The current regulatory landscape not only places an immense financial compliance burden on businesses but also delays the process of getting information into the hands of those who need it most: individuals whose data has been compromised. Given Congress' authority and responsibility to regulate interstate commerce, it is difficult to think of any area that calls more for federal standards than the breaching of personal data that inherently falls within interstate commerce.

## POSITIONS

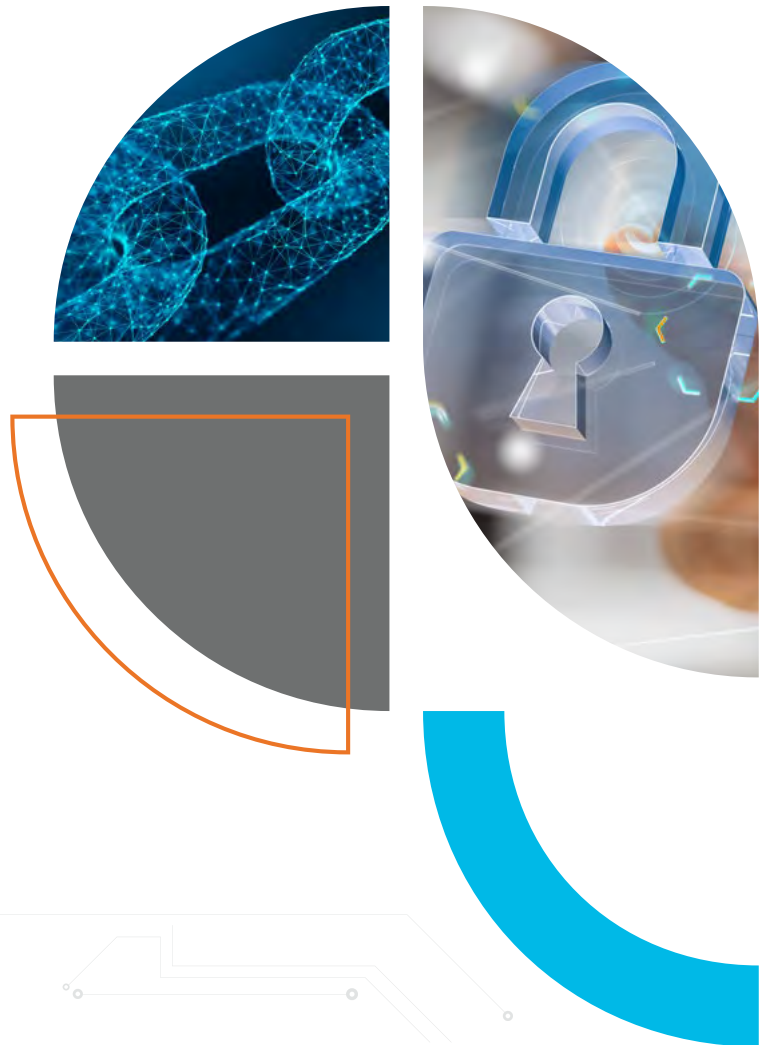
The Arizona Technology Council and its membership advocate for the following:

- » **Harm Trigger for Acquired Data** – The notification requirement should be triggered when there is a real risk of actual harm, not a theoretical concept that could lead to excessive notification about data breaches that really are not harmful. Such unnecessary notices risk so-called breach-notification fatigue that is counterproductive by causing consumers to become jaded rather than take proactive measures to protect themselves.
- » **No Private Right of Action** – Individuals should not be able to sue companies that have suffered a data breach for actions covered by federal data security and data breach notification laws. Businesses that act responsibly to protect consumer data but have suffered breaches are victims of criminal activity.
- » **Narrow and Plainly Understandable Definition of Personal Information** – To avoid excessive notification of consumers and unnecessary costs, the definition of “personal information” in legislation should not include information accessible through public records. For example, merely the combination

of a name, address and birthdate should not qualify as personal information. The definition should also be clearly understandable and well-defined in plain English to avoid the types of confusing phrasing used in several state statutes.

- » **Preemption of State Law** – Any federal data security and data-breach notification law should preempt state laws and requirements. Without strong preemption language, the compliance burden for small businesses would not be alleviated and the effectiveness of any law would be significantly undermined.
- » **Exemption for Use of Technology that Renders Data Unusable or Unreadable** – Federal legislation should include an exemption from notification requirements for companies that utilize technologies to render data unusable or unreadable. Although encryption has become standard today, this exemption should be technology neutral.
- » **Passage of the Email Privacy Act as Passed by the House** – The Email Privacy Act, which unanimously passed the House in February 2017, was the product of a carefully negotiated compromise between industry, public interest groups and House Judiciary Committee staff. Despite overwhelming support for the bill, several members of the Senate Judiciary Committee held up the bill with unrelated amendments opposed by both industry and the public interest community. The House has since passed the bill again in the 115th Congress (2017-19) and again in the 116th Congress (2019-21), but the bill failed to receive a vote in the Senate. Congress should pass this bill in 2024.
- » **Continued Work on the American Data Privacy and Protection Act to Create National Standards** – Congress should continue working on the American Data Privacy and Protection Act (H.R. 8152), introduced by the House Energy and Commerce Committee in June 2022 to create a comprehensive federal consumer privacy framework. The bill reflects bipartisan recognition of the need to create robust data privacy protection at the federal level while increasing national uniformity, which is critically important for businesses currently subject to increasingly divergent laws in the 50 states and U.S. territories. This divergence is growing and accelerating with the passage of several new state data privacy laws that went into effect in 2023, with more going live by 2026 (and several states poised to pass more such laws in the meantime). While issues remain under discussion and debate, the bill reflects a serious and welcome effort to craft bipartisan legislation in this area. Congress should continue these discussions to define the scope of consumer data that businesses may collect, set standards for collection, protect children's data, encourage and promote

adoption of data security standards, and provide appropriate relief for small and mid-size businesses from certain requirements, such as allowing them to delete data rather than correcting it in appropriate circumstances. In proposing that the Federal Trade Commission assumes even greater responsibility with respect to enforcing data privacy requirements, strong federal preemption and avoiding subjecting businesses to additional potential liability should also be goals of this proposed legislation.







- » **Limits on Financial Penalties** – Massive financial penalties are unwarranted and could force small businesses out of existence. Penalties should be reasonable and consider the size of the company that suffered the breach and the type of data accessed.
- » **Safe Harbor Designation** – Businesses that make a reasonable, good-faith effort to use consensus best practices as prescribed by National Institute of Standards and Technology or other generally recognized similar standards should be accorded a “safe harbor” from government monetary fines or similar penalties in the event of a data breach. Businesses that substantially adhere to data protection requirements under more stringent laws from other jurisdictions, such as the European Union’s General Data Protection Regulation, should likewise be accorded this safe-harbor protection.
- » **No Fixed Data Security Requirements** – Data security requirements should not be specifically enumerated within the legislation. Benchmark security standards of today may become outdated over time, requiring companies to possibly maintain outdated systems because of government mandate.
- » **No Overly Burdensome Notification Requirements** – Data breach notification legislation should avoid overly prescriptive notification requirements. In the event of a breach, companies should dedicate their resources to efforts that most directly notify and protect consumers. Additional requirements, such as those mandating the creation of call centers or the provision of credit reports, would divert resources away from small businesses seeking to protect and inform their customers.
- » **Take Other Laws into Account** – Companies that are subject to other data security and/or breach notification laws—such as the Health Insurance Portability and Accountability Act, Gramm-Leach-Bliley and the Fair Credit Reporting Act—should be exempt from these requirements.
- » **No Civil Agency Exceptions** – Some civil agencies have asked for an exception to the warrant requirement because they do not have the ability to issue warrants. Such an exception would destroy the benefits gained by Electronic Communications Privacy Act reform. It would erode privacy by codifying new powers for civil agencies that they do not already have. Civil agencies can still get access to emails and texts by serving subpoenas on users, not service providers.
- » **No Emergency Exception** – Under current practice, the government may request digital content from providers by declaring an emergency. Providers then may decide whether to comply based on the circumstances. However, there has been a push to require providers to comply any time the government declares an emergency. This has dangerous potential for abuse. Service providers do not want to be responsible for derailing criminal investigations but requiring compliance with emergencies means the government simply needs to declare an emergency to get the information it wants.



# Digital Goods and Services

## PRINCIPLE

The digital economy plays a strong role in the life and growth of Arizona industry. Given the importance of digital goods and services to the Arizona Technology Council's member companies, the Council supports policy that fosters economic growth, reduces barriers to innovation and does not lay undue technical burdens on companies. Where regulatory frameworks are introduced, the Council supports policy that is clear and non-contradictory across the multiple states and regions that companies serve.

## POSITIONS

One bill presents a case study in undue burdens. The ACCESS Act (S.2521) would require large digital services to be interoperable. This is an enormous technical ask that is not sufficiently specified and would potentially require tech companies to provide each other with an extraordinary amount of otherwise proprietary information. The Council does not support this bill.

Beyond individual bills, Congress has recently sought to limit the power of large technology companies in the United States. These bills often target distinctive business practices of Amazon, Facebook, Google, X (formerly Twitter), Apple and other large companies in attempts to level the playing field for smaller competitors. The Council supports a level playing field but does not support hobbling incumbent companies in this effort. Any bills working to address competition issues under the aegis of antitrust, fairness or open markets should balance the needs of existing companies against the needs of emerging companies. Bills that seek to eliminate perceived conflicts of interest, such as hosting third-party markets and being a seller on those same markets, should similarly balance the needs of the host and the sellers in any consideration of fair commerce practices.

A separate line of reasoning concerning the limits of companies that offer digital goods and services concerns limiting the type of company acquisitions that large technology companies can do. This idea, again, is often in the interest of increasing competition in online spaces. When considering increased competition, care should be taken to not hurt the established ecosystem of startup funding by limiting the number of outcomes for a venture-funded company. Acquisitions are normal parts of economic activity that result in continued economic growth, and the Council does not support limiting these outcomes through curtailed acquisitions.



# Immigration Reform

## PRINCIPLE

Our current immigration system is broken and causing the United States to lag in a competitive global marketplace for talent. By not addressing the failings of our immigration system, we are threatening our future productivity, ingenuity and the competitiveness of key sectors of our economy, including and especially technology.

## POSITIONS

The Council supports the following:

- » **Double or Eliminate the Caps on EB1 and EB2 Visas** – The technology and advanced manufacturing sectors are starving for talent that can be addressed through EB1 and EB2 visas. The EB1 category is only available for people who fit in one of three subcategories: people of extraordinary ability, outstanding professors and researchers or multinational executives and managers. As these subcategories make clear, EB1 applicants are generally at the top of their fields, so are required to meet stringent requirements as proof. The EB2, however, is for individuals who have an advanced degree, exceptional ability or are eligible under the National Interest Waiver. The threshold is lower for the EB2, as it does not require exceptional ability or to be outstanding. For example, an EB2 can be granted if you have a master's or doctorate degree or an equivalent. The Council supports raising the existing limits or eliminating them all together. This could have a profound positive impact on the nation's workforce.
- » **Support DACA Recipients and Dreamers** – In Arizona, 30% of DACA recipients work in advanced manufacturing. Facing a huge workforce shortage in the technology and

manufacturing sectors in Arizona, the Council supports retaining the DACA program and converting more Dreamers to be DACA eligible.

- » **Increase Green Cards for High-Skilled STEM Graduates** – The Council supports increased access to permanent residency, or green cards, for high-skilled science, technology, engineering and mathematics (STEM) graduates by expanding the exemptions and eliminating the annual per-country limits for employment-based cards.
- » **Create New Visas for U.S.-Educated Students and Entrepreneurs** – These new visas will help fill the thousands of information technology-related jobs currently open, furthering opportunities for starting and growing new businesses in the United States.
- » **Use Market-Based Visa Caps** – Using market-based caps on H1B visas is the best way to adjust to the supply and demand in the U.S. economy.
- » **Grow Domestic Sources of Talent** – The Council and its member companies are strongly committed to improving STEM education and encouraging more young Americans to choose careers in those fields. Key to that effort is encouraging federal, state and local investment in STEM curriculum for K-12 students with a structured pipeline to higher education. The Council is uniquely positioned at the intersection of innovation, education and economic growth. It supports policies that expand lifelong education and promote a skilled workforce that spurs job growth and the ability to compete globally. Quality education and worker training—and retraining—will help ensure the availability of a skilled and competitive workforce.





# Internet of Things

## PRINCIPLE

The Internet of Things (IoT) is a series of smart devices connected to one another and to analytics and hosting platforms via the internet. As IoT continues to grow, challenges and opportunities will arise. Central to the continued growth of IoT are policy principles that are transparent on privacy issues, highlight security in the IoT lifecycle and stress open standards. The Arizona Technology Council urges policymakers and regulators to tread lightly in this space, which is still in an early stage of development, so innovation and the accompanying societal benefits will continue to flourish.

## POSITIONS

The Council supports the following:

- » **Support Regulatory and Legislative Moderation** – The Council supports a federal strategy for IoT that harmonizes guidelines for IoT devices across all agencies and industries. To accomplish this, Congress must pass legislation that will direct one agency to lead the discussion. The Developing Innovation and Growing the Internet of Things (DIGIT) Act, for example, would place the Department of Commerce in this role. Congress should, however, avoid broad legislation regulating IoT, particularly regarding privacy and data security practices. With federal and state privacy and data security laws already on the books, the passing of IoT-specific legislation will only serve to stifle innovation in a nascent industry. Instead, multi-stakeholder groups involving actors from government and industry should work together to develop guidelines and industry best practices in this space based on existing privacy and data security laws and frameworks. The Council supports both the National Telecommunications and Information Administration IoT security multi-stakeholder process, as well as the National Institute of Standards and Technology's IoT Cybersecurity Framework.
- » **Deploy Broadband Infrastructure** – The Council supports deployment of a robust broadband infrastructure to support the IoT. To accomplish this, support is needed from federal, state and local governments to assist in facilitating broadband deployment.
- » **Make Spectrum Available** – To support the growth in IoT devices, the Council believes the federal government needs to make more spectrum available for both licensed and unlicensed use without placing technology-specific restrictions on how it can be used.
- » **Create Regulatory Sandboxes** – To incentivize more IoT innovation and experimentation, companies need to be assured that the risk/reward balance is favorable. To help manage risk, drive economic

- development and develop a strong regulatory regime, the Council recommends the federal government consider creating an IoT regulatory sandbox. A sandbox would provide a set of pre-approved, published rules that allow companies to test their products and business models. The rules would help limit exposure and provide innovative best practices and steps for testing them.
- » **Lead with Privacy and Data Security** – Congress should avoid broad IoT-specific legislation regarding companies' privacy and data security practices. Several federal and state privacy and data security laws and guidelines are already on the books and provide a sufficient framework to regulate IoT currently. That said, industry can and should lead with respect to design by security and risk mitigation to provide businesses, government and citizens with maximum trust in IoT.
  - » **Set Agreed-Upon Standards** – The Council supports a multi-stakeholder approach for setting voluntary IoT standards for interoperability. We are concerned that without agreed-upon standards, we could encounter a problematic piecemeal regulatory approach that stifles innovation in the industry.
  - » **Facilitate Research and Development** – The Council supports a federal government position that emphasizes research and development in the form of federal grants to help facilitate public-private partnerships, especially grants focusing on cyber-related IoT research and development.
  - » **Establish a Governance Model** – A key component of the federal IoT ecosystem is a well-structured governance model. Following the Senate's DIGIT Act, the Council supports a governance structure led by the DOC that incorporates all federal-agency stakeholders.







# U.S. Office of Technology Assessment

## PRINCIPLE

For more than 20 years, Congress had the Office of Technology Assessment (OTA), an independent, bipartisan agency set up to provide unbiased information on technology and its potential impacts. However, the agency was defunded in 1995. This stripped Congress of the ability to access unbiased technology advisors as we entered the digital age. Today, as Americans are feeling the effects of emerging technologies—including issues involving data privacy and artificial intelligence (AI)—we are experiencing the repercussions of the decision to defund this vital piece of the congressional support system.

The Arizona Technology Council believes the introduction of the OTA Improvement and Enhancement Act in the House is an important effort as Congress strives to understand and anticipate the potential benefits and effects of emerging technologies such as AI, facial recognition and quantum computing in the private and public sectors. The measure includes funding to restore the OTA. This would be money well-spent, enabling Congress to better address the opportunities and challenges of emerging technologies. To make the case, Brookings Institution issued the February 2021 report titled “It is Time to Restore the US Office of Technology Assessment.”

## POSITIONS

The Council supports the bill's improvements to the existing OTA statute (2 U.S. Code §472) that would:

» **Provide expertise with shorter turnaround times by:**

- » Adding language to emphasize information should be provided as expeditiously, effectively and efficiently as possible.
- » Adding Congressional Research Service-style deliverables to the OTA's function and duties such as providing briefings, informal conversations and technical assistance to members on science and technology issues without the need for Technology Assessment Board review, as well as objective policy options when requested.
- » Requiring preliminary findings of ongoing technology assessments in addition to completed analyses.



» **Serve all members of Congress by:**

- » Enabling any member to request a technology assessment to be considered by the board.
- » Updating board appointment so members are appointed by bipartisan party leadership in each chamber.
- » Directing the OTA to be as open and transparent with members about the review request process as possible.
- » Requiring at least one annual member day.

» **Enhance transparency by:**

- » Updating existing language to require final reports of assessments be made publicly available whenever possible.
- » Requiring an annual report on requests received, assessments completed and ongoing and other activities.

» **Maintain the OTA's forward-looking and rigorous approach by:**

- » Introducing a rotator program to hire experts from academia and industry modeled after the National Science Foundation's rotator program.

» **Complement existing legislative branch agencies, including the Government Accountability Office's (GAO) new Science, Technology Assessment and Analytics team, by:**

- » Requiring coordination with the Congressional Research Service and GAO to avoid duplication or overlapping activities.





# Federal Government Investment in Research and Development

## PRINCIPLE

We are living in an era when innovation, agility and imagination are all essential to keep pace with exponential technological transformation taking place in our society. In government, federal agencies are playing catch-up from years of underfunded research and development (R&D) impacted by economic constraints and sequestration while other nations have increased their public and private R&D investments at a faster rate. There is a longstanding notion that R&D is the backbone of a globally competitive, knowledge-driven economy. In 2010, economist Gary Becker stated that “modern economies are based on the command of knowledge and information.” It is essential that the United States sustains its investment in R&D.

Michael D. Griffin, the former undersecretary of defense for research and engineering, placed an emphasis on emerging technology while supporting an R&D budget. Griffin stated: “The reality is that we live in a time of global access to technology and global access to scientific talent. It is no longer preeminently concentrated here in America. Innovation will remain important, always, but given this global dispersion of technology and talent, greater speed in translating technology into fielded capability is where we can achieve and maintain our technological edge.”

This is good news as the government invests in programs that will address some of our greatest challenges, including Department of Defense (DoD) priorities for countering changing global threats such as cybersecurity, hypersonic weapons, access to space, astronomy and microelectronics. The ecosystem of government, large industry, small business and universities will help drive innovation and spur competitiveness. Beyond defense, the nation will benefit from government investments in smart cities; big data; quantum technologies including sensing, space exploration, health and medicine; blockchain; artificial intelligence; and Internet of Things. Additionally, increased emphasis of R&D will also help to bring various industries’ R&D back to the U.S. to help reduce some of the challenging supply chain issues that surfaced in recent years.

# POSITIONS

The Arizona Technology Council supports increases in R&D funding that encourage advancements in efficient, sustainable aerospace, including power and propulsion, autonomous operations, advanced operator interfaces, advanced sensors, and photonics. The Council further supports R&D at all levels from basic research to advanced development in big data, cloud computing, high-performance computing, automation, AI, biometrics, blockchain technology and cybersecurity. In particular, the Council supports increases to the following federal R&D budgets:

- » **Reverse the Tax Law Changes Impacting R&D** – The Council supports H.R. 2673, the American Innovation and R&D Competitiveness Act, and S. 866, the American Innovation and Jobs Act, to help ensure that the tax code continues to support innovation. For nearly 70 years, the tax code recognized the importance of R&D by allowing businesses to fully deduct their research and development expenses in the same year. Unfortunately, starting in 2022, the tax code now requires businesses to amortize or deduct these expenses over a period of five years, making R&D more costly to do in the U.S. If not reversed, this harmful tax change will hurt jobs and innovation in America.
- » **Networking and Information Technology Research and Development Program** – The federally funded program is designed to increase coordination, productivity and effectiveness among federal agency R&D efforts in networking and IT. This program can be successful in helping to drive innovation if it has an adequate budget.
- » **Department of Defense (DoD) Science & Technology Organizations** – These include the Defense Advanced Research Projects Agency (DARPA) and DoD labs that fund development in large industry, small business and academia. DARPA is continuing to seed revolutionary transformations in defense technology capabilities in universities and industry, as well as industry funding through DoD labs. These are critical to bridging the gap between products and to fielding new capability in DoD.
- » **NASA** – Through funded partnerships with industry, the agency's centers can catalyze the aerospace supply chain by making pivotal investments in technologies for the next generation of aircraft and both manned and unmanned space exploration.
- » **Federal Aviation Administration** – Key investments by the agency are paving the way for future greener aircraft and more efficient management of an increasingly challenged national airspace. Further investment will enable

advances in commercial propulsion and power technologies to be applied across all segments of the aerospace industry.

- » **National Labs and Federally Funded Research and Development Centers** – The R&D incubators have compiled a treasure trove of technologies and applications for defense and civilian interests. The benefits of the labs' role include experienced capability in rapid prototyping of new technologies ready for transitioning, showcasing and commercialization.
- » **Small Business Programs** – The broad-based Small Business Innovation Research program is funded by many agencies. It enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization. The Small Business Administration Regional Innovation Cluster (RIC) program is designed to promote innovation and commercialization in geographic areas with a concentration of one or related technologies. The Council's Optics Valley Committee is a participant in the RIC program. In addition, the Economic Development Agency provides grants (requiring matching funds) for capital projects critical to small business innovation and development.
- » **Congressional Innovation Support** – Science and technology funding should be funneled to universities, small business, and large industry, with assurance that funding is available to industry to complement government labs' in-house efforts and the most efficient use is made of overall government investments. As one specific example, Congress has formed the bipartisan, bicameral congressional optics and photonics caucus co-chaired by Sens. Kyrsten Sinema, I-Ariz., and Steve Daines, R-Mont., along with Reps. Joe Morelle, D-N.Y., and Brian Mast, R-Fla. The caucus will work to educate members of Congress and their staff about the importance of light-based research and technologies to the economy, security and scientific excellence. It will also advocate for federal investment in this innovative and exciting space. The caucus will serve as a positive, proactive voice for the optics and photonics community within Congress and as a bridge to the administration.





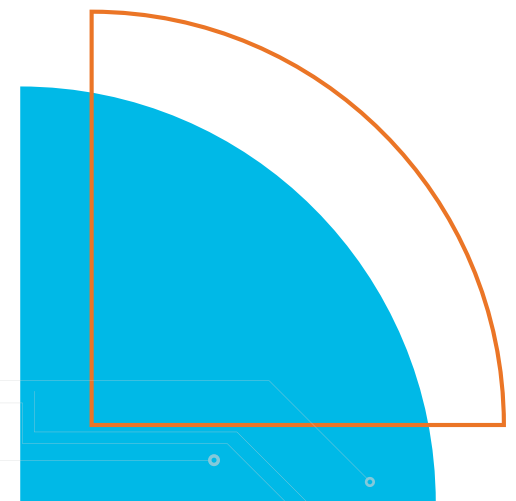
# Optics and Photonics

## PRINCIPLE

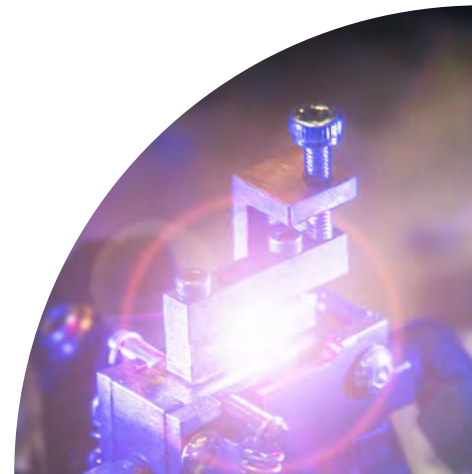
Federal investment in optics and photonics is key to enhancing our country's competitiveness and national security and driving forward the development of some of our nation's most productive and rapidly evolving technology industries.

## POSITIONS

- » **National Photonics Initiative and National Initiatives** – Support the National Photonics Initiative (NPI), a collaborative alliance of industry, academia and government seeking to raise awareness of photonics—the application of light. Funding and investment in five key photonics-driven fields are critical to competitiveness and national security: advanced manufacturing, communications and information technology, defense and national security, energy, and health and medicine.
- » One of the key accomplishments of NPI is the formation of a Congressional Optics and Photonics Caucus. This bicameral, bipartisan caucus has the objective of educating Congress and driving funding for optics and photonics issues and opportunities. Arizona Sen. Kyrsten Sinema is an honorary co-chair and Arizona Sen. Mark Kelly is a member of the caucus. The Arizona Technology Council encourages all Arizona congressional delegation members to join and actively promote caucus priorities.



- » On the technology side, quantum information technology has emerged as one of the key components for future computing and communications development. The University of Arizona is a leader in this new area and has established the Center for Quantum Networks (CQN). Efforts should be made to support and expand the mission of CQN as it drives toward product commercialization.
- » Support AIM Photonics, an industry-driven, public-private partnership that focuses the nation's premier capabilities and expertise on capturing critical global manufacturing leadership in a technology that is both essential to national security and positioned to provide a compelling return on investment to the economy. As a stable ongoing program, this partnership does not currently require policy attention.
- » Work collaboratively with and support AmeriCOM, a DoD-funded initiative focused on improving national optics manufacturing to enhance national security and global competitiveness.
- » The recently enacted CHIPS and Science Act will become a key factor in helping transition the semiconductor industry to photonics. Since the law is still so new, specific program proposals will begin next year. It is too early for any specific policy recommendations.
- » **Support Export Reform** – Ensure export reform policy support and encourage optics companies to engage in global commercial markets. The Council's Optics Valley Committee is a co-founder and coordinator of the Global Photonics Alliance, a network of more than 50 optics and photonics clusters around the world, offering extensive export opportunities.







# Smart Cities and Communities

## PRINCIPLE

While cities and communities are making progress toward improving living standards and social and environmental sustainability, the impact can be limited by narrow project scopes and obsolete systems. Cities and communities can accelerate and enhance the results of their efforts by adopting a smart city and community approach with supporting technologies.

## POSITIONS

Federal investment in smart cities and communities will help drive economic growth and innovation, create jobs, promote citizen services and increase adoption of smart technology. The Arizona Technology Council supports the Smart Cities and Communities Act of 2017, which has a primary focus of helping coordinate the various federal agency smart city initiatives, as well as creating a technology demonstration grant program. The Council also supports legislation to provide grants to small and medium-sized cities on a competitive basis. In addition, the Council supports the creation and focus of the Congressional Smart Cities Caucus.

## IMPLEMENT STATE-LED SMART COMMUNITY PLANNING FUNDS

Most cities with a population greater than 750,000 have at least one but usually multiple smart city projects underway. But few cities and communities have comprehensive, long-term and integrated plans. There are only a handful of cities worldwide well on their way to a full adoption of smart city technology in an integrated way across all sectors. Investing in the foundational planning necessary to create sustainable and thriving communities of the future that can adapt to and solve the future needs of our cities will be imperative to the continued growth and prosperity of Arizona.

## SUPPORT REGIONAL APPROACH AND SHARED INFRASTRUCTURE INTEGRATION

Many of the real-world smart city examples are typically much larger or smaller than how we traditionally define cities. They are either occurring on a more regional basis or as small neighborhood-by-neighborhood projects. Formation of permanent and sustainable regional innovation-driven



organizations will provide the necessary capacity and knowledge transfer across public, private and academic sectors to establish Arizona as a national leader in the creation of smart, connected and resilient communities of the future. These organizations will connect community leadership across municipal boundaries and institute a collaborative operational framework to mobilize the community ecosystem in pursuit of identifying, developing, testing and implementing innovative solutions for the region's shared civic challenges at scale. The Council supports the work being done by The Connective, otherwise known as the Greater Phoenix's Smart Region Consortium, and the Pima Association of Government's Smart Region Initiative efforts managed by the Regional Partnering Center. These connective-tissue organizations were established to galvanize the public-private ecosystems that can advance smart-community solutions in their respective regions. For the future, establishment of a Northern Arizona smart-region consortium that is brought under a cohesive umbrella including the Greater Phoenix and Southern Arizona initiatives offers the potential to help support our economy and establish Arizona as a global leader in smart-community development.

## **SUPPORT INNOVATION SANDBOXES AND REGIONAL PROCUREMENT INITIATIVES**

A critical barrier plaguing the development of smart communities across the globe is local government's inability to identify, develop, test, prove and procure innovative technology solutions in a scalable and repeatable manner that keeps up with the speed of innovation. Through establishment of a connected network of geographically bounded innovation sandboxes in our cities and towns, regulatory policies can be established to allow quickly implementable proof-of-concept testing with real infrastructure, real scenarios and real data. This can optimize the ability of communities to make more informed and appropriate technology solution decisions while de-risking full-scale implementation programs. With the ability to cooperatively procure solutions, communities can be more efficient with their resources by not having to engage in individual contracting efforts for the same solutions, as well as further establishing their unique comparative advantages and core competencies that help support the greater region.

## **ENCOURAGE REGIONAL DATA COLLABORATION**

Smart cities and communities use information and communications technology to enhance their livability, workability and sustainability. They collect information using

sensors, devices and other systems that then send the data to analytics systems to understand what is happening now and what is likely to happen next. Data is invaluable to creating a sustainable and resilient smart community of the future. The ability to seamlessly intake data from multiple sources to aggregate and analyze the data then securely and safely share information will be paramount to Arizona's continued growth. Currently, our communities are operating in silos with varying levels of resources and expertise when it comes to data analysis.

The Council supports the development of a regional shared data standard, governance structure and shared data exchange. This will enable cities and towns with the ability to collaboratively access and analyze necessary data sets that can be layered to develop more informative insights, creating better service delivery and unlocking new programs and solutions to shared challenges. Allowing approved academia and private-sector subject matter experts to participate in this regional data collaboration will effectively add capacity and expertise to local government teams charged with solving these complex challenges while creating the potential for exponential benefits to be realized without negatively impacting communities' budgets.

There is vast potential to provide smart city and community benefits to a larger number of citizens and those advantages are immense. First is the potential to empower citizens, allowing access to unparalleled services provided by local government. These services—spanning several different sectors including transportation, energy, water management and public safety—have the potential to be transformational to citizens while creating significant efficiencies for the city and community.

Another possibility is the creation of new jobs. As cities grow their smart technology and services capabilities, there are several emerging employment opportunity sectors:

- » **Infrastructure** – Cities will need to have large teams to help deploy the vast array of sensors that will constitute the Internet of Things (IoT) smart city and community ecosystem.
- » **Cybersecurity** – With internet-connected sensors, best-in-class cybersecurity solutions and applications are absolute necessities. A well-trained workforce will need to implement cyber solutions across the infrastructure ecosystem.
- » **Analytics** – An immense amount of data coming from IoT sensors will need to be analyzed. City governments will need to beef up their analytical capabilities to ensure their citizens gain the most benefits from the analyses.



# Broadband, Digital Access and Digital Equity for All

## PRINCIPLE

The COVID-19 pandemic exposed major gaps and deficiencies in the availability, affordability and reliability of broadband internet connections in the United States at large, but especially in rural and tribal areas. These underlying conditions have existed since the broad adoption of the internet as a fundamental utility for commerce and communication. The pandemic has amplified the digital divide and reinforced the importance of having available, affordable and reliable broadband connectivity for all as government, businesses, the workforce, schools and health care systems have transitioned to digital platforms and practices.

The transition to digital learning by K-12 schools and higher education has been particularly difficult for many rural and low-income communities due to lack of broadband connectivity at home. Tribal nations and remote rural communities continue facing barriers to planning and deploying communications services, including their remote settings, sparse population densities and limited access to middle mile and long-haul fiber connections.

## POSITION

The federal government recognized these mounting needs as reflected in recent, precedent-setting broadband policies focused on new investment and regulatory reforms. As the exponential increase in citizen, business and institutional broadband needs continues, the government should further prioritize, invest in and evolve regulations, enabling new broadband infrastructure, advanced technology solutions and support services to help close these gaps and better provide sufficient digital access to all.





# Broadband Reforms and Initiatives Across Federal Agencies

## PRINCIPLE

Given the number of federal agencies and programs involved in regulating the telecommunications industry with responsibilities to help remediate the digital divide, especially supporting rural broadband deployment, it can be challenging for state government, institutions, small providers and rural communities to identify and pursue appropriate federal investment and deployment opportunities. Businesses, local governments, electric and telephone cooperatives, tribes and other rural entities also face imposing burdens in applying for and managing federal funds. Telecommunications reform has always come in spurts as we once again find ourselves on the cusp of incredible innovation and sweeping transformations.

## POSITIONS

The Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA), a research and development agency of the Department of Commerce (DOC), along with the Department of Agriculture's (USDA) Rural Utility Service (RUS) lead most of the federal wireless and broadband regulatory evolution, grant and loan programs, wireless spectrum availability and auctions, and project and industry oversight. The federal government should work to simplify and reform industry regulations while streamlining the processes and management burdens through which grants and loans are handled. The government should also streamline the fragmented, overlapping patchwork of funding from multiple agencies and programs by consolidating or synchronizing them with an optimized national broadband strategy as recommended by the Government Accountability Office.

## ADOPT MINIMUM BROADBAND SPEEDS

The FCC, RUS, DOC's NTIA and Economic Development Administration, and other agencies are rapidly adopting a minimum broadband speed goal of 100 megabits per second (Mbps)



download and at least 20 Mbps upload (100/20 Mbps) and 1 gigabit per second symmetric service for community anchor institutions (CAIs) due to the large number of simultaneous users to guide infrastructure investments and program implementation to the greatest extent practical. Many broadband applications that promote rural, economic and community prosperity are better enabled by such increased speeds, especially telehealth, e-learning, business and other applications relying on real-time performance or moving large amounts of data. A scalable, non-symmetric minimum performance level should continue to be employed as application bandwidth needs and network capacity continue to grow. However, consideration should be given to not unnecessarily preclude wholly adequate solutions from fixed and mobile terrestrial wireless and emerging satellite constellations. Additionally, federal agencies should provide clear criteria and formulas for how much backhaul providers must have in place to support reasonable anticipated use across populated communities at the minimum required speed offerings, as grant applicants' current ad-hoc estimates and justification of backhaul capacity vary greatly. This can lead to inconsistent planning and performance following implementation.

## **EXPLORE BROADBAND MAPPING AND GRANT/LOAN DETERMINANTS**

High-quality data is necessary to ensure public broadband investments and deployment efforts correctly prioritize areas that are cost-effective and lack access. During the past decade, significant state and national broadband mapping efforts have been made, but they have been fraught with inaccuracies and issues, especially their consideration of a census block being characterized as served if a single residence in the block has access to broadband. This was problematic because it tended to grossly overstate broadband availability in larger, rural census blocks and the FCC's use of "maximum advertised," not actual speeds, when mapping broadband coverage.

The Broadband Deployment Accuracy and Technological Availability (DATA) Act was enacted in March 2020, requiring the FCC to change the way broadband data is collected, verified and reported. The FCC is now collecting and disseminating more granular and accurate broadband service availability data from wired, fixed-wireless, mobile and satellite broadband providers based on a broadband serviceable location fabric atop which broadband maps can be overlaid to report detailed and accurate broadband service availability data by location, community, and region. With congressional funding, the FCC and NTIA should build on recent progress to create better public mapping tools with improved user interfaces and experiences,

high accuracy assurances, better information on available providers and services, the addition of the location and characteristics of CAIs, and the overlay of demographic and open-source data sets to aid individual and institutional broadband consumers, as well as economic development stakeholders.

## **PROVIDE FEDERAL GRANTS, LOANS AND END-USER SUPPORT**

Congress has dramatically ramped up infrastructure funding for broadband grants and loans to providers, communities, education, libraries, telehealth and public safety that will be managed through FCC, NTIA and USDA programs. As we continue to emerge from the pandemic and adapt to the changes it has brought, we need to commit to continuity in new broadband infrastructure funding accompanied by agency and program process reform. There also should be reconsideration of long-standing barriers, revisiting the concepts and metrics for unserved and underserved, excessive application and reporting procedures, and significant match or cash-on-hand requirements. Further, Congress should approve the Broadband Grant Tax Treatment Act (H.R.889/S.341) to amend the federal tax code so grants received from the Infrastructure Investment and Jobs Act and the American Rescue Plan Act will not be considered taxable income.

Restrictions should be reformed that inherently limit deployment of adequate broadband capability in many rural areas and Broadband Equity, Access and Deployment rules should be moderated regarding letters of credit; workforce requirements; Build America, Buy America (BABA) Act guidance; program income restrictions; and other elements that could limit the program's applicability to and access by smaller internet service providers, and tribal and local governments. CAIs should receive equal priority in funding considerations alongside unserved residential customers, be enabled to establish gigabit-level connections and have those CAI infrastructure investments further leveraged through "to and through" policies.

The Arizona Technology Council strongly supports additional funding for the Affordable Connectivity Program, which is approaching a digital cliff with a permanent program to defray the cost of broadband subscriptions, devices and skilling to provide important support for low-income, disadvantaged and other communities on the less fortunate side of the digital divide.

## PROVIDE E-RATE SUPPORT FOR SCHOOLS AND LIBRARIES

Efforts to promote flexibility within the FCC's E-Rate program should be supported to deliver home connectivity solutions for unserved and underserved students and respond to connectivity issues associated with the COVID-19 pandemic. The FCC, with congressional enablement, if necessary, should:

- » Open E-rate-funded networks to the surrounding community (provided E-rate dollars do not pay for these extensions), generally waiving the E-rate cost allocation rule. Funding would support bus and bookmobile Wi-Fi and other creative efforts that seek to bring broadband into the community to address the homework gap.
- » Provide consistent funding for Category Two equipment and services while continuing to expand what is covered, including adding coverage for necessary cybersecurity products and services.
- » Offer something like the recent "Special Construction" program in which Arizona and 16 other states that provided 10% matching funds were able to leverage hundreds of millions of dollars in new fiber infrastructure project funding to reach underserved rural schools and libraries.
- » Establish long-term funding solutions to extend or take the place of the Emergency Connectivity Fund to help schools and libraries provide the tools and services their communities need for remote learning with rigorous rules and procedures to limit fraud and abuse.
- » Allow and fund the use of satellite services for very remote areas where the cost of laying fiber or reaching by wireless is prohibitive and population sparse.
- » Improve E-rate application processes to eliminate applicant and service provider confusion, streamline and strengthen the competitive bidding process, and clarify the transition of services and gift rules.

## SIMPLIFY AND STRENGTHEN THE UNIVERSAL SERVICE FUND

The FCC's Universal Service Fund (USF) provides essential and ongoing financial support to ensure all consumers have affordable broadband access to services, including schools, libraries and health care providers. The FCC should commence a process for stakeholders to debate and the FCC to resolve how best to reform the universal service mandate with its significant decline in revenues. The goal would

be to make the requirement sustainable while safeguarding and improving it by reforming the high-cost support mechanism and low-income support mechanism currently geared toward legacy telephone support, which would allow broadband deployment support in similar circumstances. The FCC should simplify and streamline applications for funding from the E-rate and Rural Health Care (RHC) programs, reject placing an overall cap on the entire USF, and replace the outdated contribution mechanism with a more stable, long-term funding source.

## REFORM THE RURAL HEALTH CARE PROGRAM

Congress should substantially increase funding based on demand data and the FCC should improve the administration of its RHC program that currently suffers from insufficient funding and a slow, cumbersome administrative process. Additionally, the FCC and Universal Service Administrative Co. should process RHC program applications faster and with more transparency. The FCC should establish rates based on competitive market forces and actual costs. Finally, RHC program rules should be reformed to no longer discriminate against consortia.

## EMPOWER LAND MANAGEMENT AND RIGHTS OF WAY

Federal land management agencies—particularly the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, and Federal Highway Administration—play crucial roles in permitting and siting broadband infrastructure. The federal government should implement improved planning and permitting coordination between public lands management agencies and tribal governments, as telecommunications projects often cross multiple federal lands and tribal jurisdictions. The government should drive collaboration across agencies, simplify processes and improve timelines for permitting broadband infrastructure projects crossing federal and tribal lands and rights of way including the introduction of shot clocks, especially those co-located with existing structures and other linear infrastructure, such as roads, rail lines, transmission lines and pipelines. States should be included to further coordinate, data share and ease multijurisdictional project planning and permitting, which has traditionally presented obstacles to private and public investment.

## REFORM WIRELESS SITING

FCC wireless siting reform is key to 5G leadership as the uptake of more advanced, higher-speed mobile services continue unabated and traditional mobile providers

make inroads into fixed wireless services. As wireless providers invest hundreds of billions of dollars in necessary upgrades and new networks, the escalating costs and burdens of siting new towers and transmitters have become significant barriers to continued American wireless leadership. In addition, densification with small cells necessary for 5G urban performance makes reform even more critical even as advanced antenna and signal processing technology improve urban service delivery. Each locality may have its own rules and timelines governing the permitting and installation of wireless infrastructure. This leaves wireless providers to navigate a maze of disparate policies and potential project timelines, often antiquated procedures and at times, impractical fee structures. The FCC previously set some national guidelines for states and municipalities regarding wireless infrastructure, but it now needs to implement a national strategy and framework to enable and drive the wireless networks of the 21st century.

## **NET NEUTRALITY AND THE CARRIAGE OF CONTENT AND PACKETS**

Net neutrality is critical to maintaining a vibrant internet. A modern framework is needed that encourages the freedom and innovation that makes the internet the vital tool it is today. Today's FCC operates on the assumption that providing internet services—traditional or broadband—is not a common carriage and cannot be regulated as if it is. The FCC should be given new authority over broadband and allowed to lock in widely agreed upon protections for internet traffic with clear rules that prohibit providers from blocking or throttling access to lawful content. This would provide market stability, system transparency, consumer choice, and freedom for online-service vendors to innovate and scale new applications and businesses.

## **FREE UP SPECTRUM FOR INNOVATION, RURAL BROADBAND, 5G AND IOT/IIOT**

Wireless spectrum is a valuable resource that can help support innovative and cost-effective connectivity solutions across the nation. Auctioning additional spectrum licenses alone cannot meet the ever-growing demand for data and innovative pathways to market. Unlicensed spectrum is an essential complement to licensed spectrum and can open new applications and markets in innovative and dynamic ways as Wi-Fi has ably demonstrated. NTIA's recent declarations that broadband networks based solely on unlicensed spectrum are "unreliable" goes against the positive performance of many such networks done right and should be reconsidered.

Wireless broadband use has skyrocketed in recent years. Demand for wireless data and broadband speed is expected to continue to grow exponentially. The FCC and NTIA should continue to free up additional licensed and unlicensed spectrum real estate by building on recent actions. They include the Educational Broadband Service Tribal Priority Window (2.5 gigahertz, or GHz); the opening of Citizens Broadband Radio Service (3.5 GHz) and TV White Space (470-790 MHz) for licensed and lightly licensed use with Spectrum Access System services; and the opening of an enormous swath of spectrum (1.2 GHz) in the 6 GHz band for unlicensed use such as Wi-Fi 6E, LTE-style mobile and microwave backhaul. The two agencies should continue to pave the way for 5G, V2X for autonomous/connected vehicles, and IoT/IIoT for smart everything and more with low-band, mid-band and high-band (mmWave) spectrum reform and reallocations under licensed, lightly licensed and unlicensed strictures from sub-GHz to at least 100 GHz. The Council also supports working to catalyze the development and adoption of open, interoperable and standards-based networks such as open radio access networks through the Public Wireless Supply Chain Innovation Fund funded through the CHIPS and Science Act of 2022 to help drive wireless innovation, foster competition and strengthen supply chain resilience.

The FCC and NTIA should strive to increase competition and availability of services through additional and innovative access to licensed and unlicensed spectrum. They should maximize the potential for unlicensed use of TV white space spectrum with its non-line-of-site capabilities and reach well suited to remote rural service provision. They also should allow schools, libraries, nonprofit organizations, local governments and tribes the opportunities to obtain unused educational broadband service and other spectrum licenses to serve rural markets. They should also pass the Spectrum Auction Reauthorization Act of 2023 (H.R. 3565), which includes the allocation of a percentage of future auction funds to recapitalize the NTIA Middle Mile Grant program.

## **SUPPORT ALTERNATIVE CONNECT AMERICA COST MODEL (A-CAM)**

The Council urges the FCC Wireline Competition Bureau to provide sufficient ongoing support for services delivered over existing networks capable of delivering 100/20 Mbps or better speeds as part of finalizing Enhanced A-CAM offers ensuring a reasonable reserve to address concerns with the support threshold.





# Congressional Broadband Reforms and Initiatives

## PRINCIPLE

Congress holds the power of the purse and sets the guidelines and rules by which federal agencies operate. There has been much progress since the Telecommunications Act of 1996, but a major update in governance expectations and structures is long overdue.

## POSITIONS

### SUPPORT ONE-OFF RURAL BROADBAND ACCELERATION FUNDING

As part of the federal government's pandemic relief assistance, Congress has allocated substantial one-time funding focused on accelerating rural broadband infrastructure deployment in genuinely unserved and underserved areas. Those are where the economic benefit from increased connectivity is greatest, and a multi-pronged approach can be used to build on existing agencies and their programs. However, long-term strategic investments and ongoing support should follow to secure gains and continue to address the remaining digital divide.

### GIVE BROADBAND BLOCK GRANTS TO STATES

Beyond providing substantial additional funding for traditional federal agency broadband grant and loan programs, Congress has allocated ample block grants to each state and territory through the U.S. Treasury's Capital Project Fund and the Infrastructure Investment and Jobs Act's Broadband Equity, Access and Deployment (BEAD) funding for states' executive branches to prioritize, distribute and manage in addressing general broadband infrastructure issues and responding to digital access and digital equity. Congress should take additional action in concert with the National Telecommunications and Information Administration to moderate the BEAD program rules regarding letters of credit; workforce requirements; Build America, Buy America (BABA) Act guidance; program income restrictions; and other elements that could limit the program's applicability to and access by smaller internet service providers, and tribal and local governments.

## **MAKE BROADBAND SUBSIDIES DIRECTLY TO CITIZENS**

Having established a robust subsidy program with the Affordable Connectivity Program's provider credits to help low-income Americans gain connectivity by underwriting their broadband access costs, Congress and the Federal Communications Commission (FCC) need to follow up with universal service reform and other programmatic solutions to make such benefits permanent.

## **EXPAND TRIBAL BROADBAND SUPPORT**

Congress and federal agencies should pursue policy, programmatic and fiscal opportunities to improve broadband connectivity on tribal lands, including designing federal programs to promote partnerships among tribes, states and various broadband providers. Federal broadband programs should allocate a designated portion of their available funding to supporting projects on tribal lands. Special attention should be given to encourage competitive broadband service offerings from multiple providers on tribal lands to ensure tribal citizens are provided options on par with their nontribal neighbors.

## **HELP REMOVE REGIONAL AND LOCAL BARRIERS TO DEPLOYMENT**

Federal financial support should be used to encourage local jurisdictions to remove deployment barriers. Local and state governments should streamline access to public rights of way and utility poles, adopt "dig-once" policies, install conduits during roadwork, and ensure fees are based on costs and remain competitively neutral. Congress could go further by making receipt of federal infrastructure funds contingent on adopting a model municipal code that would streamline access to rights of way and municipal infrastructure such as utility poles and government buildings.

Policies governing access to utility poles can have a significant impact on the pace of broadband deployment to unserved and underserved markets. This means regulators and pole asset owners need to provide a consistent framework that recognizes the variety of circumstances that affect local pole attachment use, streamlines the pole attachment process, and expedites broadband deployment to communities with rates, terms and conditions that are non-exclusive, non-discriminatory, reasonable, predictable, and prompt.

## **ALLOW ELECTRIC COOPERATIVES TO TAKE THE FIELD**

Federal agencies should continue expanding the eligibility of electric and telephone cooperatives to pursue Department of Agriculture and FCC broadband deployment program support, as cooperatives' existing infrastructure and access to rights of way can help promote low-cost connectivity solutions for rural communities. It is also suggested to pass and fund the Grant to Rapidly Invest and Deploy Broadband Act, a pioneering proposal to provide a robust new federal cost-share to spur investment in a nationwide middle-mile backbone along the nation's existing electricity grid.

## **LEVERAGE CAI-FUNDED CONNECTIONS TO COMMUNITIES**

Federal programs often direct broadband infrastructure funding to community anchor institutions (CAIs) such as schools, libraries, health care and regional government. These institutions could help leverage additional public and private investments in surrounding rural areas if Congress would legislate a more holistic funding approach that supports infrastructure deployment "to and through" CAIs.

## **PROMOTE REGIONAL INTERNET EXCHANGES**

Congress should take steps to encourage the growth of regional internet exchanges, as they would help promote cost-effective, reliable broadband service in rural areas by serving as open interchanges and peering points available to all broadband providers serving the area.

## **OTHER ACTION**

Congress should revisit and replace the legacy Communications Act to better define and refine definitions of services and modernize regulatory structures. Lawmakers also should reform the FCC's merger review process and provide funds necessary to implement the Broadband DATA Act (S.1822). Additionally, Congress should fund research and test beds for innovative new wireless equipment and services.

# Federal Taxes

## PRINCIPLE

The Arizona Technology Council supports members of Congress and the administration's advancing tax and regulatory policies that spur innovation and grow the economy.

## POSITIONS

Create a permanent and competitive tax code that incentivizes investment for businesses of all sizes, including:

- » Improving access to capital and providing expanded support mechanisms for high-growth businesses.
- » Maintain federal corporate tax rates established during the previous administration.
- » Ensure simplicity and fairness in interstate taxation:
  - » Interstate sales tax legislation should not result in additional compliance burden to businesses, and any policies should include a small business exemption.
  - » Support policies that provide consistent, balanced and predictable sales tax treatment across international, state and local jurisdictions. These policies should prohibit unfair and unrelated discriminatory taxes.
  - » Reduce compliance burdens on the digital workforce by supporting legislation that simplifies nonresident employee and employer requirements to report and withhold state income taxes.
  - » Support interstate tax fairness by treating digital products the same as tangible goods.
- » Maintain federal corporate tax rates established during the previous administration.





# Use of Consumer and Enterprise Advanced Air Mobility Vehicles

## PRINCIPLE

Unmanned aerial vehicles (UAVs), also known as drones, offer immense opportunities for innovation, from cargo delivery to emergency response to simply photographing places where humans cannot travel. Urban air mobility (UAM) vehicles provide the ability to move people in more sustainable and more efficient ways. Combined, UAV and UAM innovation is occurring rapidly. However, regulations are not in place to allow these vehicles' use in many innovative ways. The Federal Aviation Administration (FAA) released its Small Unmanned Aircraft Systems (UAS) Regulations (Part 107) in 2016, which limits UAV use to visual line of sight during the day and away from people. While a great first step, these rules still prevent UAVs from being used for several enterprise purposes. Further, the FAA in May 2022 confirmed a change to the regulatory approach for "powered-lift" certification and the pilots who will be operating these vehicles, which will use performance-based airworthiness standards found in Part 23 of the FAA regulations.

## POSITIONS

The Arizona Technology Council supports a broader use of UAVs and UAM vehicles than the FAA permits in its current rules. Congress and the FAA have demonstrated interest in crafting rules for enterprise but there is much to be done before they are put in place. We believe Congress and the FAA should strive to establish flexible rules that allow use to go beyond line of sight and above populated areas. Further, Congress and the FAA should work to continue to develop standards for airspace management to allow for safer, broader operation.

The Council supports and advocates policy changes that will not only embrace but encourage the growth of this emerging and important industry. These include measures to:

- » Permit the operation of small UAVs beyond visual line of sight.
- » Support the development of infrastructure to safely manage the widespread use of low-altitude airspace.

- » Enable broader UAS access to commercial mobile services and unlicensed spectrum vital to the safe and widespread integration of UAS.
- » Embrace the cargo and human carriage and delivery potential of UAV technology in a wide array of capacities ranging from humanitarian aid to commercial operations.

The Council believes the government must implement thoughtful regulations that reflect and anticipate the rapid growth of the industry. Ultimately, the Council supports policies that enable rather than hinder the use of UAVs and UAM vehicles, and advocates for risk-based regulations that allow the safe and expedited integration of these into the national air space.







# Global Trade and Market Access

## PRINCIPLE

Technology product and services exports reached an estimated \$365.2 billion in 2021—a gain of \$32.6 billion from 2020, representing a 9.8% year-over-year increase—and directly supported an estimated 962,000 American jobs. Arizona ranked No. 8 in the for U.S. for tech product exports. For additional growth, market opportunities should be expanded worldwide, tariff and non-tariff barriers reduced (including in areas such as digital trade), foreign direct investment encouraged, and U.S. technology advocated globally.

## POSITIONS

The Arizona Technology Council supports trade policies that expand and open markets for the technology sector, prevent or eliminate trade barriers, promote U.S. foreign direct investment, and boost the global competitiveness of the industry. In addition, Council supports uniformity of international data privacy and security laws to encourage innovation and policies that preserve the free flow of information across national boundaries.

- » **Support the United States-Mexico-Canada Agreement (USMCA)** – Continue to support full implementation of the USMCA.
  - » Assist Council members in developing USMCA compliance policies and procedures for making and supporting claims and maximizing trilateral nearshoring opportunities resulting from international supply chain and economic security issues revealed because of the pandemic.
  - » Monitor U.S. Customs and Border Protection's proposal to apply USMCA marking rules to determine non-preferential country of origin of products imported from Canada and Mexico, as well as enforcement actions under the USMCA labor and environmental provisions.
- » **Monitor China** – Continue advocating the Council's position on Section 301 and additional trade remedies and resulting tariffs.
  - » Monitor ongoing Section 301 tariff refund litigation before the Court of International Trade.



- » Monitor and update members on the evolving export controls imposed against China, Macau and Hong Kong on advanced computing, high performance integrated circuits, and semiconductor manufacturing equipment.
- » Continue advocating for intellectual property protection in general and trade secret protection and enforcement of proprietary data in particular, and support Council members in implementing more effective internal company procedures, policies and risk management to protect against theft of intellectual property, proprietary data and trade secrets.
- » Advocate for stability between the United States and China, including de-escalation of the trade war to restore confidence and predictability in the trade relationship and global economy.
- » **Monitor Taiwan** – Monitor advances under the US-Taiwan Initiative on 21st Century Trade, aimed at increasing trade in goods between the two countries and removing discriminatory barriers through trade facilitation and anti-corruption measures, and policies addressing technology standards and digital trade, among others.
- » **Advocate for a Relationship with the United Kingdom** – In early June of this year, the White House announced a trade framework entitled, “The Atlantic Declaration: A Framework for a Twenty-First Century U.S.- UK Economic Partnership.” The Atlantic Declaration is intended to serve as a framework for bolstering binational cooperation on clean energy transition, artificial intelligence and national security. The framework signals that a full trade agreement with the UK is currently off the table and refocuses diplomatic efforts on areas of mutual interest. In a related move, the White House also announced an intent to designate both Australia and the UK as “domestic sources” under Title III of the Defense Production Act. This would permit the U.S. government to invest and issue grants to firms in those two countries in the defense manufacturing sector, which is a privilege currently granted only to Canadian firms. Given the importance of the relationship between the U.S. and UK, the Council should continue to advocate for advances under The Atlantic Declaration framework and support future efforts to expand the framework into a more fulsome trade agreement over time.
- » **Monitor Russia** – Monitor and update Council members on the evolving sanctions and export controls imposed against Russia and Belarus by the United States and its allies.

- » **Monitor and Support The Americas** – Monitor and support the Americas Partnership for Economic Prosperity, an initiative advanced by the State Department and Office of the U.S. Trade Representative with partner countries across the Americas—Barbados, Canada, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay—based on a framework similar to the Indo-Pacific Economic Framework for Prosperity. The ongoing consultations have five focus areas: reinvigorating regional economic institutions and mobilizing investment; making more resilient supply chains; updating the basic bargain; creating clean energy jobs and advancing decarbonization and biodiversity; and ensuring sustainable and inclusive trade.
- » **Make Permanent the WTO** – Advocate to make permanent the World Trade Organization moratorium on customs duties on electronic transmissions and advocate for an early agreement on e-commerce negotiations by promoting ambitious and inclusive digital trade rules.
- » **Finalize EU-U.S. Privacy Shield Agreement** – Support negotiations with the European Union to finalize a new agreement that reinstates the United State under the Privacy Shield Adequacy Decision of the European Commission on personal data transfer from the European Union to our country.
- » **Promote Digital Trade** – Advocate for the Council's position on digital services taxes and promote a digital economy committed to the movement of data across borders and data privacy approaches that enable cross-border data flows. As global digital integration accelerates, companies must be able to move data freely and securely across borders to maintain operations, reach customers and compete. The Council supports working with U.S. allies to counter digital authoritarianism and establish international standards for emerging technologies.
- » **Develop International Digital Tax Framework** – The United States and more than 130 countries in June 2021 agreed to update the global tax system and develop an international digital tax framework at the Organisation for Economic Co-operation and Development (OECD). In support of the G-20/OECD Inclusive Framework negotiations, the United States and other G-7 countries announced agreement on how to allocate taxing rights of the largest and most profitable multinational enterprises, including digital companies, and a global minimum tax. The United States in October 2021 reached a compromise—the agreement on digital services taxes (DST)—with several European countries to withdraw their national DSTs once the multilateral deal goes into effect and to credit companies with any excess taxes paid. As part of it, the United States

agreed to terminate the suspended Section 301 trade actions against Austria, France, Italy, Spain and the United Kingdom. The United States reached a similar agreement with Turkey and India in November 2021. The U.S. trade representative and Treasury Department are monitoring implementation. The Council supports this position.

- » **Monitor Emerging and Foundational Technologies** – Monitor and advocate for efforts to identify and establish export requirements for emerging and foundational technologies under the Export Control Reform Act.
- » **Monitor Proposed Carbon Border Taxes and Tariffs** – Monitor and advocate for proposed carbon border taxes on certain carbon-intensive products from countries lacking adequate emissions controls.
  - » Support the Industrial Deep Decarbonization Initiative established via the Clean Energy Ministerial (United Kingdom, India, Germany, Canada and the United States) and focused on supporting and identifying policies that lead to decarbonized industrial materials. This includes standardized carbon assessments, procurement targets and policies, and targeted investments.
- » **Support U.S.-EU Trade and Technology Council (TCC)** – Monitor and support high-level cooperation between the European Union and the United States on trade and technology with the goal of promoting competitiveness and prosperity while focusing on strengthening transatlantic technological and industrial leadership, compatible technology standards and regulations, green technology, supply-chain security, data governance, export controls, investment screening, and global trade issues. Provide technical leadership and expertise to federal authorities, as appropriate, to ensure industry concerns relating to trade and technology are informing the development of U.S.-EU standards and regulations.
  - » Monitor the recently-announced Clean Energy Incentives Dialogue (will be integrated into the TCC) focused on coordinating incentive programs to avoid trans-Atlantic trade tensions and ensure that such programs are mutually reinforcing and do not lead to windfall profits for companies that could play the two against each other for more and better subsidies, keeping the focus on clean energy deployment and strong domestic economies.
  - » Monitor the Global Arrangement on Sustainable Steel and Aluminum between the U.S. and EU, which combines the goals of decarbonization

and competitiveness in the steel and aluminum sectors. This collaboration includes initial commitments to drop tariffs and duties on each other's products and aims to establish a market for steel and aluminum that is based on lowering carbon intensity and combating global overcapacity—all while placing barriers in front of nonparticipating nations.

- » **Support CHIPS and Science Act:** Support continued development of regulatory measures to implement provisions of the CHIPS and Science Act. Assist Council members in understanding and maximizing business attraction and foreign direct investment opportunities resulting from federal incentives and grants available under the act.
  - » Continue to coordinate with local and regional economic development agencies to ensure the free flow of information between companies, federal agencies, academic institutions, and state and local governments regarding economic development opportunities available under the act.
  - » Support development of international market opportunities for technology exports developed by the onshore semiconductor industry.
- » **Support Trade Agreements and Special Trade Programs** – Considering several major shifts in domestic economic policy and global economic governance that are impacting U.S. trade policy, advocate for the expansion of bilateral and multilateral “framework” and free trade agreements with other nations that advance strategic priorities. The shifts include a pivot toward industrial policy in the United States driven by three major pieces of legislation—the Inflation Reduction Act, the CHIPS and Science Act, and the Infrastructure Investment and Jobs Act; a dramatic turnabout in global attitudes toward supply chain management and the balance between efficiency, resilience, and security in cross-border trade; and the obsolescence of the WTO) as a forum for resolving trade disputes. The targets should be the United Kingdom, Japan, Taiwan, Kenya, the European Union, Uruguay, Brazil, and India. Support also is encouraged for the Indo-Pacific Economic Framework for Prosperity launched in May 2022 among the United States and partner nations Australia, Brunei, India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand and Vietnam; the recently agreed IPEF Supply Chain Agreement designed to build supply chain resilience among the member nations; renewal of the Generalized System of Preferences; and enactment of the latest Miscellaneous Tariff Bill. The advocacy focus should be to ensure

inclusion of robust technology provisions in any agreements and special trade programs, including strong digital trade and intellectual property protection provisions. Trade agreements must include specific provisions that accomplish the following objectives:

- » **Enable the Free Flow of Data** – Companies must be able to move data securely across borders and should not be forced to localize data or infrastructure as a condition of doing business. Trade agreements must include specific provisions protecting the movement of data across borders and the ability of companies to operate without requiring them to use local infrastructure or build expensive and redundant data centers.
- » **Protect Source Code and Algorithms and Prohibit Forced Technology Transfers** – Companies should not be forced to share source code and algorithms or transfer technology as a price for doing business. Trade agreements must protect innovation by prohibiting governments from requiring companies to hand over source code and algorithms or transfer their technology, intellectual property, trade secrets, production processes or other proprietary information as a condition for accessing the market.
- » **Ensure Technology Choice and Encourage Open Digital Architectures** – Innovative companies should be able to utilize the technology that best suits their needs. Closed architectures prevent interoperability and competition, limiting the ability of companies to use the most cost-effective, secure and innovative technologies. Trade agreements should encourage widespread use of open architectures to drive innovation in key technologies—including cloud computing, artificial intelligence and 5G telecommunications—and ensure companies can choose their suppliers of choice, irrespective of where they are headquartered. Each party should accord non-discriminatory treatment to the services, service suppliers and digital products of the other party, including for new and innovative digital products and services.
- » **Foster Innovative Encryption Products** – Encryption is a critical tool to protect privacy and security in the digital ecosystem. Trade agreements should protect innovation in encryption products to meet consumer and business demand for product features that protect security and privacy while allowing law enforcement access to communications consistent with applicable law.

- » **Prohibit Digital Customs Duties** – Trade agreements should prohibit all customs duties for digital products, ensuring that duties do not impede the flow of software, information and digitally enabled services that drive innovation for companies and consumers.

- » **Expand U.S.-Japan Digital Trade Agreement** – Advocate for expansion of the U.S.-Japan Digital Trade Agreement, which entered into force in January 2020 as “stage one” of an executive agreement that anticipated a broader trade agreement with Japan.
- » **Support UK-Arizona Trade Relationship** – Given the reluctance of the U.S. to move forward with a comprehensive U.S./UK trade agreement, support state-level trade negotiations between the United Kingdom and Arizona to enter a memorandum of understanding covering such measures as technology and innovation, services, opportunities for improved access to procurement contracts, and mutual recognition of professional qualifications.
- » **Advocate for Trade Remedies** – Advocate for trade remedies (e.g., Section 201, Section 232, Section 301, anti-dumping and countervailing duties); monitor implementation status, exemptions and exclusions; and update impacted members.
- » **Promote International Trade Legislation and Regulation** – Advocate for customs modernization, as well as clear, transparent and reasonable customs procedures, export regulations and sanctions. Support and assist members in developing effective compliance programs.
- » **Educate on Forced Labor** – Update members on the increased enforcement of U.S. laws and regulations prohibiting the use of forced labor, including the Uyghur Forced Labor Prevention Act of 2022, as well as educate members on supply chain best practices.
- » **Monitor Import/Export Enforcement** – Monitor and update Council members on the increased enforcement of U.S. import, export and sanctions laws and regulations by U.S. government agencies, including newly launched enforcement cooperation strategies and voluntary disclosure policies.
- » **Monitor Anti-boycott Compliance** – Monitor and update members on U.S. anti-boycott compliance and reporting requirements, including increased enforcement and penalties for violations.
- » **Support Export-Import Bank** – Continue to support the bank as an essential financial tool for small and medium-sized businesses, many of which would be unable to de-risk and finance their export transactions without it.



- » **Monitor Foreign Direct Investment** – Monitor and update Council members on developments in U.S. government reviews of inbound and outbound investments. Promote a trade and regulatory environment that attracts foreign direct investment into the United States, particularly in areas that generate high-wage job creation.
- » **Support U.S. and Foreign Commercial Service** – Advocate for support for the U.S. and Foreign Commercial Service and oppose any legislation or other efforts to eliminate the agency, reduce or defund the annual budget allocations associated with operations that support U.S. exports and foreign direct investment, or move functions associated with the agency from the Department of Commerce to the State Department or other federal agency.
- » **Advocate for International Organizations** – Advocate for support of international and multilateral organizations that underpin a system of global cooperation in the areas of trade and security, including the WTO, World Customs Organization, North Atlantic Treaty Organization, United Nations, Wassenaar Arrangement, Nuclear Suppliers Group, Australia Group, and Missile Technology Control Regime.
- » **Reduce Tariff and Non-Tariff Barriers to Trade** – Promote the development of trade policy positions that reduce the use of tariff and non-tariff barriers.
- » **Monitor Import and Export Classifications** – Monitor new opinions and amendments by the World Customs Organization's Harmonized System Committee with respect to the Explanatory Notes and Harmonized System of tariff classification, monitor amendments to the export laws and regulations relative to commodity jurisdiction and classification and update Council members who may be impacted.
- » **Address Supply Chain Disruption** – Advocate for legislation and regulatory measures against exorbitant detention and demurrage fees for shippers, as well as for solutions to ensure open access to instruments of international traffic and shipping containers.
  - » Support and promote secure and resilient international supply chains in critical areas, including transportation of agricultural products, semiconductor manufacturing and advanced packaging, large capacity batteries, critical minerals and materials, and pharmaceuticals and active pharmaceutical ingredients.
  - » Support the launch of a pilot early warning system to expand information sharing and enhance policy coordination on possible disruptions to global supply chains, and better prepare to confront and overcome economic coercion.

Similar early warning systems are already in place with the European Union and under consideration as part of the Indo-Pacific Economic Framework.

- » **Market Access** – Oppose prohibitive regulatory requirements as market access conditions, including cybersecurity mandates and source code disclosure requirements.
  - » Oppose barriers to trade such as tariffs on technology products, customs classification requirements for digitally enabled goods and services, unilateral digital tax measures, and prohibitive regulatory requirements.
  - » Engage in opportunities to enhance trading relationships in key markets for the industry, including India, Vietnam, Indonesia and Brazil.



# Workforce

## PRINCIPLE

A skilled workforce should be promoted by supporting policies that expand lifelong science, technology, engineering and math (STEM) learning.

## POSITIONS

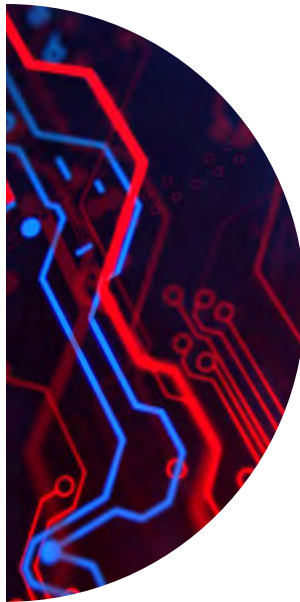
- » Support high-skilled immigration reform.
  - » Increase green cards for high-skilled STEM graduates.
  - » Create new visas for entrepreneurs.
  - » Adopt market-based visa caps.
- » Modernize the workforce.
  - » Increase alternative pathways into the workforce through work-based programs such as apprenticeships. Specifically, the Arizona Technology Council supports the CHANCE in TECH Act (H.R. 720) and the Cyber Ready Workforce Act (H.R. 2721/S. 1466).
  - » Modernize Pell Grant eligibility to include short-term credit and noncredit workforce training to be able to respond to labor market needs for short-term training.
- » Modernize the education system.
  - » Make targeted P-20 STEM investments to ensure students of all ages can benefit from the digital economy.
  - » Support the JOBS Act to expand access to Pell Grants for lower-income students enrolled in quality industry aligned STEM short-term training programs that fall below the standard 600 clock hours or 15 weeks in length.
  - » Pass the 21st Century Workforce Act to ensure all workers have access to critical digital skills necessary in their current or future workplace.
  - » Reauthorize the Workforce Innovation and Opportunity Act into a program that can deliver industry-aligned education and skills training that strengthens business. Create an adequately resourced program that grants equitable access to industry-aligned skills training that strengthens business.





- » Support and develop initiatives that encourage underrepresented communities and veterans to pursue STEM career paths, including IT, cybersecurity, computer science, advanced manufacturing, and health care.
- » Increase the adoption of experiential learning.
- » In cooperation with educational institutions nationwide, support development of the necessary curriculum to ensure a sustainable flow of qualified graduates armed with the latest skills.
- » Support early college in high school models that blend and blur the lines between K-12 and college to reflect labor market needs for talent with more than a traditional secondary education.
- » Recognize that the ability to recruit and retain the strongest workforce means supporting an inclusive workplace—one that welcomes all people regardless of faith, race, ethnicity, sexual orientation, gender identity or any other defining identity or characteristic.
- » Support sustained investments in a STEM ecosystem.
  - » Between 2017 and 2027, STEM jobs are expected to grow 21%. This growth will occur largely in the fields of computers and technology, advanced manufacturing, aerospace and defense, bioscience, and business and financial services. Opportunities in these sectors, however, can only be harnessed by a workforce proficient in STEM skills and the creativity and critical thinking fostered by STEM literacy.
- » Leverage federal investments for a potential 300% to 500% return on investment. This investment is needed for the expansion of STEM opportunities to nearly all of Arizona's 1 million-plus students and their families, 90,000 teachers, 550,000-plus small businesses, and myriad industry and corporations.
- » **FY24 Budget Request** – Report language for \$10 million to establish matched savings programs for Pell-eligible, postsecondary students. Grants will be awarded as partnerships between states and nonprofits to establish and expand matched savings programs for eligible students that provide postsecondary cost assistance and financial wellness training. The grantees will establish savings accounts for each participating student, support financial literacy education and support matching funds for amounts deposited by students and their families. This language was included in the House Appropriations-passed Labor, Health and Human Services bill committee report in June.





## ABOUT THE ARIZONA TECHNOLOGY COUNCIL

The Arizona Technology Council is the driving force behind making our state the fastest-growing technology hub in the nation, connecting and empowering Arizona's technology community. As Arizona's premier trade association for science and technology companies, the Council is recognized as having a diverse professional business community. The Council offers numerous events, educational forums and business conferences that bring together visionaries, leaders and innovators to make an impact on the technology industry. Council members work toward furthering the advancement of technology in Arizona through leadership, education, legislation and social action. These interactions contribute to the Council's culture of growing member businesses and transforming technology in Arizona. For more information about membership or attending an event, please visit [aztechcouncil.org](http://aztechcouncil.org)

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