

2021

PUBLIC POLICY GUIDE



ARIZONA
TECHNOLOGY
COUNCIL
a place to connect and grow



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The Arizona Technology Council is the principal advocate for science and technology-based companies in Arizona.

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, business-focused agenda.

The Council and its Public Policy Committee hereby submit the 2021 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.
- Help ensure technology businesses can recover from the effects of the COVID-19 pandemic then thrive.

The Committee created a list of principles in a number of subject areas then established related positions to be used as the foundation of the Council's public policy efforts in 2021. In some cases, the positions will advance through development and advocacy of legislation that will be introduced during the Arizona Legislature's 2021 session. In other instances, the positions will be used on an ongoing basis as regulators 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-based 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.

2021 ARIZONA TECHNOLOGY COUNCIL LEGISLATIVE PRIORITIES

- Reauthorize and extend the Angel Investment Tax Credit program for another 10 years.
- Look for opportunities to cultivate a diverse, equitable statewide Arizona science, technology, engineering and math (STEM) ecosystem. 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. This will result in expansion of STEM business and education opportunities throughout rural and urban Arizona communities, fueling a strong, diverse talent pipeline prepared to meet the state's anticipated growth.
- Consistently, equitably and sustainably fund the state's P-20 education system, including pre-K, K-12, career and technical education district (CTED), equitable access to dual enrollment, and postsecondary programs. Support a funding formula that addresses the achievement gap for those students in lower socio-economic areas and ensures access to the proper infrastructure for supporting distance learning models.
- Support policies directed at helping the business community, especially small businesses, recover from the COVID-19 pandemic and prepare for the post-pandemic working environment.

AEROSPACE, AVIATION AND DEFENSE

PRINCIPLE

Arizona is 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 such as Raytheon, Honeywell, Boeing, Lockheed Martin, General Dynamics and Northrop Grumman—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 the 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 must 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 provide Arizona a competitive edge as a top state supporting U.S. national security objectives.

POSITIONS

Defense Spending — Create an environment that enables sustainment and growth of total billing in defense contracting in the state. Arizona has incomparable 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, Marine Corps Air Station Yuma, U.S. Air Force training and readiness at Luke Air Force Base for the F-35 and Davis Monthan Air Force Base for the A-10. Also, we 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.

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 over-development.

Military Base Missions — Examine the future mission focus for all six military bases in Arizona. Work with local support groups and the Arizona Technology Council 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 continuation of the A-10 mission at Davis-Monthan Air Force Base and/or support an adequate mission replacement, including the F-35. 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.

Unmanned Aerial Systems — 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. 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. In addition, support policies that encourage development and use of UAS technology for commercial applications. 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.

Commercial Space Technology — Attract, encourage and nurture growth of commercial space market applications and companies in Arizona. The global commercial space market is valued at more than \$400 billion annually and fast approaching more than \$1 trillion, according to Wall Street estimates. Arizona plays a critical role across the commercial space value chain through established corporations such as Boeing, Viasat, Honeywell and Northrop Grumman, plus is host to new and early-stage commercial space entrants such as FreeFall Aerospace and Katalyst Space Technologies. Continue to support and expand high-profile research and development programs from NASA and other agencies for major end programs such as OSIRIS-REx at The University of Arizona and Psyche Mission at Arizona State University. Encourage an ACA-led 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 rule-making that supports commercial space activities could lead to faster commercial space growth in Arizona.

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, delivery and availability of bioscience innovations.

POSITIONS

University Research Funding — Advance the research enterprise system-wide by working collaboratively with the Arizona Board of Regents. Proposition 301 funding allocations (described in detail in the Education, Workforce and Workplace section of this Guide) should be protected. Renewed investment will continue to accelerate Arizona's economic base—and position as an innovation leader—in the growing biosciences fields. Specifically, funding levels for the Technology and Research Initiative Fund (TRIF), which provides essential research funding to Arizona's public universities, must be reauthorized and maintained. Higher levels may be contemplated for the future. Increased focus should ensure equitable access to diverse students working on research projects.

Internships — Develop and fund a pilot program to support science, technology, engineering and math (STEM) internships that reflect the diversity at Arizona's high schools, community colleges and universities, and broaden access to underrepresented students.

Improve Health Care and Reduce Costs — Focus on cost-saving measures and total cost of care for patients. Efforts should be made to ensure all Arizonans have equitable access and opportunity to benefit from the lifesaving and life-changing innovations the biotechnology and medical technology industries can offer.

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 specifically designed to benefit the people of Arizona today and in the future.

Support 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 faces the worst public health emergency in recent times.



BIOSCIENCES AND HEALTH CARE: TELEHEALTH

PRINCIPLE

Telehealth and its integration into delivery of health care through electronic means 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

Telemedicine and Telehealth — Pay particular attention 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 families to isolated patients. With social distancing and selective quarantining the new norm, telemedicine is becoming even more necessary and critical for Arizona's health care facilities, providers and patients in the wake of the COVID-19 pandemic. It will be especially important to health care providers increasingly depend on broadband to recruit, train and prepare the workforce of the future, as well as support staff in

inter-professional 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 enabling out-of-state medical professionals to deliver telemedicine consults and services here, and Arizona medical professionals to similarly deliver teleservices to those in other compact participating states.

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 benefitting, as well as making Gov. Doug Ducey's executive orders regarding telemedicine permanent. However, still lacking is uniform understanding of the new telemedicine parity and licensure laws that expanded service coverage and removed statutory and regulatory barriers, resulting in a lag in providers' participation that negates their ability to reach their potential. We need to educate and advocate for uniform deployment and enforcement of the new laws at state and local levels by 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 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 research and development ecosystem second to none. Despite those programs, many firms seeking capital to enter the critical early stage of business development leave Arizona because crucial funding is scarce. Arizona needs to address this issue because it is losing out on some of this country's most coveted jobs.

POSITIONS

Angel Investment Recapitalization — Extend the Angel Investment Tax Credit for an additional 10 years instead of allowing it to sunset in 2021. The amount of angel investing in the state decreased significantly after the initial \$20 million in authorized funds was depleted in summer 2015. In the 2017 session, lawmakers authorized the Arizona Commerce Authority (ACA) to certify an additional \$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 increase investors to invest when they otherwise may not have. Re-authorization of the program beyond 2021 is necessary to continue the infusion of investment in the startup community. These innovative companies offer high- quality, high-paying jobs and their success will aid in a quicker recovery of the state's economy.

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 has made its program permanent and the state making its own program's levels permanent will continue encouraging companies to invest additional research and development monies here in Arizona. In 2008, the Legislature approved

increasing the R&D tax credit value from 20% to 24% for the first \$2.5 million in qualifying expenses and increasing the rate for qualifying expenses in excess of \$2.5 million from 11% to 15%. Additionally, an analysis should be done to determine ways companies can realize the intended benefits of the program that has resulted in increased investments in Arizona by being able to utilize some of their unused credits and is mutually beneficial to the state and the companies.

Early-Stage Venture Capital — Increase early-stage funding that is integral for startups and early-stage companies as they try to take their products to market. Although in recent years Arizona has found creative ways to try to address some of these issues through initiatives such as the ACA's Competes Fund being utilized for micro-enterprises, there is still a large need to focus on this issue to reduce the number of companies recruited to surrounding states with seed and early-stage venture capital. Most states around the nation have created early-stage venture capital funds through which the states take on a role in supporting investments in these companies. Arizona needs to look at 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.

Coordination of Angel Investment Activity – Support the efforts of the ACA 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 information clearing house for startup and early-stage companies so that information about these companies can be introduced to other members of the startup community, including potential investors who can learn about these companies and still comply with the applicable securities laws.

CYBERSECURITY

PRINCIPLE

With data moving into the cloud and the digital economy expanding, cybersecurity is now one of the most critical issues facing the nation. As we move deeper into the digital age, new threats and data breaches occur almost daily.

Cybersecurity is a top priority. Some reports put the number of monitored cyberattacks at 1.5 million annually in the United States—with up to 85% of data breaches undetected—and 30 million attacks per year globally. Other reports estimate that approximately half of all cyberattacks target small businesses but 70% of them are unprepared to deal with such attacks. Reports further estimate that attacks will cause an estimated \$6 trillion in damages by 2021. There is no question we are in the midst of a cyberwar. As a result, American businesses and public sector institutions alike find themselves at the forefront of the battle, making cybersecurity improvements critical for organizations of all sizes and types.

Arizona aims to be a national leader in the sector by attracting cybersecurity companies and talent while promoting good cybersecurity practices among organizations across the state, including working with higher education and the Arizona Cybersecurity Team established by Gov. Doug Ducey. In addition, the Arizona Technology Council will help by focusing on three core cybersecurity positions: awareness, education and regulation.

POSITIONS

Awareness — Prioritize awareness and intelligence about the risks that unfriendly groups and malicious individuals pose to businesses and the best practices for discerning and blocking attacks.

Education — Support and accelerate cybersecurity education for individuals, from K-12 students to senior citizens, to help protect all Arizonans. 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 qualified to fill the nearly 14,000 open cybersecurity jobs across Arizona. While hiring needs have declined in most industries, increased cybersecurity needs as a result of COVID-19 create the opportunity for cybersecurity talent development to lead in demonstrating the value of competency-based hiring, as well as casting a wider, more inclusive net for talent by recognizing certificates, credentials, use of apprenticeships and other earn-and-learn programs. Support state funding for community colleges looking to develop or significantly expand existing IT programs to expand the cybersecurity workforce.

Regulations — Promote responsible regulation that centers on reasonable and consistent privacy notice and breach-response requirements by working to keep public agencies educated and aware of cybersecurity best practices.



ECONOMIC DEVELOPMENT

PRINCIPLE

Arizona must be able to compete with any state or country by having the most competitive economic tools possible while encouraging innovation, business attraction, retention and growth. Arizona is becoming a known tech hub in the country after creating, attracting and growing many technology companies during the past decade due to its favorable economic climate. However, we must ensure we continue programs that assist with this, not adopt policies that could be detrimental to economic growth and drive toward equitable economic recovery.

POSITIONS

ACA State Promotional Effort — Advocate for Arizona Commerce Authority's (ACA) continued funding and work to ensure it remains the platform for the state's economic development efforts. Encourage support for the many ongoing ACA initiatives focused on enhancing the Arizona's innovation ecosystem. An example is the Arizona Advanced Technology Network (AATN), a partnership between Pima Community College, Central Arizona College and the Maricopa County Community College District. AATN has worked with manufacturing companies such as Raytheon and Boeing to create a common curriculum in automated industrial technology that provides students and incumbent workers with competencies to maintain the increasingly automated 21st century manufacturing. AATN is expanding to include other Arizona community colleges. 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. Support the Arizona Office of Economic Opportunity's mission to increase the quality of the workforce and business climate in the state through use of economic, demographic and regulatory data; policy development; and relationships with key partners.

COVID-19 Economic Recovery — Support policies that help facilitate and allow business leaders to drive the equitable economic recovery for the businesses across the state, especially those high-quality, high-paying jobs that can help get all of our citizens back to work. The pandemic has caused

the way we do business across the world to change. With non-essential businesses having to shut down for a period of time, adjust to a remote workforce approach and experience harsh economic times for many, Arizona needs to create and support policies that help the businesses in the state recover. Although the technology industry was able to weather many of these challenges better than other industries, there is still going to be a period of recovery, as well as adjustment and growth for those businesses that pivoted to meet the needs of the citizens during the pandemic.

Proper Business and Employer Protections — Update statutes to ensure fair liability coverage during the pandemic to not only include health care institutions but also businesses trying to protect not only themselves and their employees but also their customers and Arizona residents. As new information about the coronavirus becomes available, the Centers for Disease Control and Prevention and Arizona Department of Health Services have updated their guidance on the precautions that businesses should take to help protect their employees and customers. Those that take the necessary measures to mitigate the spread should have some protections that ensure no frivolous lawsuits would further damage their already struggling businesses.

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. Also, the Council will participate in trade missions around the world in order to provide economic opportunities for its members. Encourage support for RevAZ, which is Arizona's Manufacturing Extension Partnership (MEP) center created through a partnership between the ACA and the National Institute of Standards and Technology (NIST). 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 medium-sized manufacturers.

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 working from home if necessary.

Local Efforts — Ensure we foster local economic development by supporting local entrepreneurs who engage with the global economy to deliver goods and services around the world. Additionally, there are initiatives to make Phoenix, Tucson and other Arizona communities more supportive of startups and innovation. Those efforts need to be encouraged and supported where possible. 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 and investors, as well as mentors since studies show challenges that limit growth and sustainability in these areas.

Promote increased investment and expand tax incentives for employment in federally certified opportunity zones, where the majority of residents are non-white and low-income. By being forced to have employees work remotely during the 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 talent.

Fewer Regulations — Continue to reduce the number of regulations that discourage companies from relocating to or growing in the state. There has been 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.

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 Council employ the highest-paid employees. In particular, the Council recommends efforts to target the following industries: health and bioscience; semiconductor and electronics; information technology; energy; aerospace (including commercial space),

aviation and defense; telecommunications; optics; and medical, financial and education 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 (IoT).

Promote 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 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.

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 Minority Entrepreneurship — Support business efforts to boost minority entrepreneurship by increasing supply chain diversity, creating pitch competitions and mentoring support, as well as additional access to capital for startups and growth of minority-owned or largely minority-owned businesses.





EDUCATION, WORKFORCE AND WORKPLACE

PRINCIPLE

The lack of skilled talent needed to meet demand continues to be a top challenge and barrier to business growth for Council members across industries and disciplines. With pandemic-related unemployment rates exceeding 10% Arizona—more than double the rate one year ago—the skills mismatch that exists for high-tech jobs is even more evident. Important now more than ever is a robust, aligned education and workforce development system that ensures an equitable economic recovery, eliminates systemic and long-standing inequities, and provides all Arizonans with education and career opportunities. At all levels, science, technology, engineering and math (STEM) education must be proactively supported, with access to high-quality STEM education available to all students. Workforce development and retention strategies and funding should be coordinated and aligned with targeted high-skill, high-wage, high-demand industry sectors, with an increased focus on under-served communities and individuals.

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

- Focusing on increased graduation from high school for all students, as well as credentials, certificates and degrees in high-wage, high-demand STEM jobs.
- Increasing company participation in classroom and work experiences for K-12 and postsecondary students to develop STEM workers now and in the future.
- Enabling the attraction and retention of the talent—in-state or imported—needed for Arizona to thrive as a technology hub, with a heightened focus on underrepresented talent.
- Eliminating the digital divide by increasing broadband access, as well as needed devices to ensure equitable opportunities for education and training for all.

POSITIONS

Career and College Readiness — Increase Arizona youth and adults' attainment of credentials, certificates and degrees aligned with business needs, and accelerate economic development by championing support for improvements in pre-kindergarten through postsecondary education and workforce development. Major areas of focus should include supporting high expectations for all students, providing funding for career awareness and development in 7th and 8th grades, understanding career pathways for students and adults to align with Arizona's targeted growth industries, leveraging industry engagement, and increasing work-based and work-like experiences provided through high school and postsecondary education. Continue to enhance and support the development of relationships between K-12, community colleges and universities in order to diversify and expand career readiness options for Arizona youth.

Education Funding — Fund the state's P-20 public education system with consistent, dedicated and sustainable revenue sources. Specifically:

- Protect the Proposition 301 funding allocations extended by the Legislature in 2018.
- Support state finance formula changes by adding an "equity weight" to give struggling school districts resources necessary to close existing achievement gaps of students in lower socio-economic circumstances.
- Restore fourth-year career and technical education district (CTED) funding for programs in key industries crucial to Arizona's continued economic development.
- Ensure funding for computer science teacher training, aligned with the new Arizona K-12 computer science standards.
- Update the state's expenditure limitation (EL) formula to reflect increased weighting for career and technical education enrollments and include short-term, non-credit training for incumbent workers in targeted high-wage job growth. This will help maximize full engagement of all current and future workers to support Strategic Vision 2030 and Achieve60AZ while providing work-ready employees for industries critical to the state's economic development without additional taxation.

- Support funding requests and projects initiated by community colleges, including fully funding the STEM formula funds for Pima Community College and the Maricopa County Community College District, support for rural colleges, and CTED and large-scale programs that increase access to careers with high wages. Examples include funding for expanding aerospace and defense, cybersecurity, health science and other programs aligned with workforce and economic development priorities of the state. The current EL formula is a barrier to expanding these high-cost programs.
- Support funding requests initiated by the Arizona Board of Regents that will build upon the existing strengths of the state's public university system to ensure access for qualified students, world-class research capabilities, and a workforce pipeline prepared for the demands of the new economy.

Other reforms should include equitable funding of K-12 education with a formula such as Proposition 301's that positions Arizona at minimum with mean-level funding among the 50 states.

Develop alternative ideas to appropriately, consistently and sustainably fund pre- and full-day kindergarten, CTED expansion, equitable access to dual enrollment, and community colleges and universities in addition to K-12. Long-term comprehensive funding reforms should modernize and promote a 21st century delivery model of education focused on equity, performance and accountability.

Accountability — Drive attainment of the statewide goal Achieve60AZ by funding the strong support necessary to meet the accountability metrics set forth by Progress Meter and adopted by the governor's office. Support the implementation of meaningful and aligned accountability systems with appropriate resources and training.

Talent Gap — Align workforce development and education efforts with employer needs. Encourage companies to actively engage with educators to produce a workforce that aligns with employer needs through curriculum development and hands-on work experiences in classrooms, the workplace and remote settings. Support and increase the use of business-friendly, competency-based work experience models and pathways to accelerate

EDUCATION, WORKFORCE AND WORKPLACE CONTINUED

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.

Support hiring and developing tech talent, especially in areas like IT and cybersecurity, to lead in demonstrating the value of competency-based hiring while casting a wider, more inclusive net for talent by recognizing certificates, credentials, the use of apprenticeships and other earn-and-learn programs.

CTED — Support budgeting and programming for fourth-year CTED to maximize and accelerate acquisition of knowledge and skills—increasing certifications and credentials—in key high-demand industries such as engineering, IT, cybersecurity, artificial intelligence, health care and manufacturing. Encourage CTED entrepreneurship and offset program costs by supporting statute amendments that allow sales of services in addition to products and items by a Career and Technical Student Organization program approved the Arizona Department of Education, and by removing revenue generating barriers.


Dual Enrollment — Increase implementation of early college and career high schools by removing the barriers to full participation in dual enrollment, including raising the 25% cap on 9th and 10th grade enrollments and developing sustainable funding models. Additionally, ensure access to and equity in dual enrollment opportunities for all students to increase diversity and credential, certificate and degree completion. Ensure Arizona Teachers Academy funding is available to support new teachers seeking Dual Enrollment with a focus on high-demand STEM subject areas.

Credit for Experience — Support legislation to allow high school credit for high-impact, work-based and work-like experiences. Leverage incentives, tax credits and apprenticeship grants to promote internships and apprenticeship programs. Work with community colleges to market and expand awareness of credit for experience granted through prior learning assessment programs.

Establish a statewide system for articulated CTE college credit through the creation and adoption of an AZ Career and Technical Education articulation policy statement that encourages adoption by the state's community college districts and boards. These articulation agreements would enable students to receive the credit while in high school at essentially no cost and provide them a seamless transition to postsecondary education, maximizing the use of resources and minimizing content duplication.

STEM — Advocate and support policies to cultivate a statewide STEM ecosystem. A five-year STEM plan recently released by the White House stresses the importance of ecosystems to “focus on long-term, shared, sustainable and flexible STEM missions that bridge, integrate and strengthen the learning opportunities offered by organizations across sectors compared with isolated, independent entities.” The plan also encourages all federal agencies to fund cross-sectoral learning to encourage lifelong STEM literacy. Given Arizona is home to a flourishing STEM industry base and expected to significantly grow between 2017 and 2027, we must act now to take advantage of the momentum generated by the plan and leverage our state investment (likely three- to fivefold). This will result in expansion of STEM business and education opportunities throughout rural and urban Arizona communities, fueling a strong, diverse talent pipeline prepared to meet the state's anticipated growth.

Computer Science/High School Computer Science Mandate and Support Teachers Academy — Ensure funding for computer science teacher training and programming is aligned with the new Arizona K-12 standards so all students in these grades have computer science education access in the next year. Support Gov. Doug Ducey's participation in the Governors' Partnership for K-12 Computer Science and any related recommendations from the Arizona Cybersecurity Team. Support and promote the Arizona Teachers Academy, with a focus on STEM education a program that provides free college education to those willing to go into teaching and remain there for at least four years.



E-Learning – 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 e-learning approaches. Drive increased use of digital curriculum, STEM programs, and consortiums to better prepare students for the jobs of the future and improve learning outcomes for diverse student populations and needs. Expand opportunities for online teacher training such as ASU Prep Digital's Arizona Virtual Teacher Institute. A significant cluster of e-learning and innovative educational companies and institutions already here could create the opportunity for Arizona to be a leader in innovation and transformation of educational technology and outcomes, including workforce development.

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. The pandemic has revealed that K-12 and higher education are facing enormous, unanticipated challenges as they virtualize their services and enable remote participation as many remain unserved or under-served today. The homework gap is real and pressing for many disadvantaged students and their families, damaging their ability to participate in today's socially distant learning environment. The recent award of \$40 million from the Governor's Emergency Education Relief Fund to build new fiber infrastructure is an excellent and significant first step along a path on which we should continue.

Focus, plan and invest to resolve huge 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. Launch and fund programs to provide disadvantaged students with devices and applications that allow them to participate remotely.

Build on recent progress with E-rate programs by having the ACA's state broadband director work with the Arizona Department of Education and Arizona State Library, Archives and Public Records. (E-rate programs support rural infrastructure expansion; availability of reliable, affordable broadband for their institutions; and telecom equipment and services.) Add staffing at the ACA to coordinate the aggressive pursuit of E-rate, as well as other grants and participation in industry programs. Have the ACA and the Office of the Governor engage national organizations and industry partners to help form and assist coalitions of school districts, counties and regions to successfully qualify for and implement E-rate projects.

Workforce Development/Job Training — Ensure a job training program is available for companies so workers can be trained quickly, which will help the economy recover from the pandemic. Arizona is one of the only states in the region without such a program after the repeal of the business tax that had been funding it before a sunset scheduled for the end of 2020. 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. Promote targeted, intentional business-lead participation in bridging the talent gap with diverse talent. Expand the Talent Pipeline Management program with an increased focus on under-served communities, students and citizens.

Engage business, K-12 and postsecondary education and workforce and economic development communities in collaborative, integrated sector, and cross-industry strategies and implementation. Leverage programs, organizations and agencies charged with addressing skilled-workforce shortages in high-tech industry sectors and ensure equity and access to all training and development opportunities. Promote evidence-based practices and incentives to bridge the talent gap, including apprenticeships

EDUCATION, WORKFORCE AND WORKPLACE CONTINUED

for students and re-careering adults, as well as innovative onboarding programs. Support equitable recruitment and hiring, as well as an increased focus and support for employee development as a source of upward mobility—mid-, senior- and executive-level talent development—for all employees. Use 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.

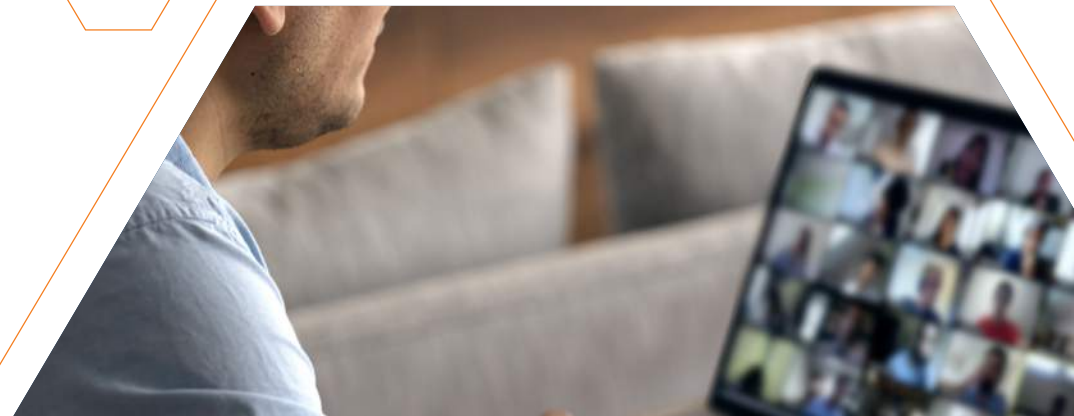
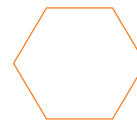
Job-Driven Financial Support/Assistance — Explore job-driven financial support models, including eligibility for unemployment benefits for underemployed individuals participating in intensive training programs for high-wage, high-demand jobs; tuition waivers; and “last dollar” scholarships/ tuition assistance for adult learners to complete in-demand certificates or degree programs. According to the National Skills Coalition, these strategies could develop talent for the high-skill, high-wage, high-demand jobs critical to Arizona’s economy.

Employment Non-Discrimination — 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, disability and age in the areas of employment, housing and non-discrimination. Employees should be judged on their merits instead of identities and employers should foster an environment of acceptance where innovation can thrive. Many of the surrounding states already have updated their statutes to ensure these protections are in place, giving them an advantage in recruitment and attraction of top talent and businesses. Updating Arizona’s non-discrimination laws will ensure we are competitive, which is good for our citizens and economy.

Addressing Inequality in Criminal Justice to Increase Access To Job Opportunities — Leverage the opportunities provided in Gov. Ducey’s new universal licensing recognition law to ensure that any restrictions

for residents obtaining an occupational license are narrowly targeted and provide a means to recognize successful rehabilitation. Additionally, consideration of the fair chance hiring legislation would eliminate the question about prior convictions on hiring applications and allow individuals with past convictions to be considered based on current merit versus being excluded upfront. This could build on an executive order signed by the governor in 2017 that eliminated the question on applications for state-government positions. This legislation included exceptions for jobs requiring fingerprint-clearance cards, such as teaching and child-care positions, as well as in cases when an applicant’s criminal conviction directly related to an open position. At the same time, it would open doors for many qualified applicants to restart their lives, support their families and engage in their communities, as well as provide companies with an increased source of talent. Providing companies with best practices such as those developed by the Society of Human Resource Management also can help employers proactively lead by example.

Other considerations to break down systemic barriers to inequality that disproportionately impact non-white citizens in Arizona should include clean-slate legislation that allows the use of technology to automatically clear a person’s non-violent criminal record if they stay crime-free for a pre-determined period of time. The restoration of voting rights would positively impact those who have been disenfranchised—a large percentage being persons of color—allowing them to fully participate in the American democratic process.



ENERGY

PRINCIPLE

The link between technology investment and energy is fundamental and unbreakable. To attract investment capital, as well as 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—has these needs. Policy and legislative choices that enable market forces to improve the status quo have historically been favored. There are a number of attractive policy options that would benefit Arizona technology 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.

The current political and social climate in Arizona supporting an increased reduction in carbon provides the ideal landscape for companies and utilities to meet their aspirational 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 clean energy resources is an important factor for companies as they consider where to make future investments.

POSITIONS

Diversification of Energy Supply, Utilization — Improve diversification of the state's energy mix by including cost-effective solar and other renewable energy resources. Enhance the state's integration of renewable resources and reliability through the use of flexible resource technologies. These policies would help hedge against short supplies or rising prices. Policymakers should enact laws that enable diversification of the energy supply and make certain the benefits of these improvements inure to all Arizona companies while continuing to ensure reliability and stability of costs.

Natural Gas — Continue to take advantage of low-cost natural gas resources to provide electricity to Arizonans. Intermittent renewable resources augmented by natural gas generation can provide a carbon-reduced, secure power source as Arizona transitions to a carbon-free electricity grid. Modern, flexible natural-gas generation will be important to maintaining reliability of the grid in the interim.

Nuclear Energy — Continue Arizona's utilization of the low-cost base load power of the Palo Verde Nuclear 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.

Renewable Energy — Seek ways to attract sustained economic investment that takes advantage of the state's world-class solar energy resources and other renewable energy technologies. For many companies, 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, so it is imperative to continue developing supportive policies that allow companies to source clean energy that will encourage business relocation and expansion. Arizona exhibits some of the best attributes for harnessing solar energy in the world. The state's ideal location, 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 renewable energy generation and innovation.

Energy Efficiency — Support policies that encourage 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.

Electric Transportation — Create and maintain a robust and growing transportation electrification market and build out electric vehicle charging infrastructure as Arizona continues to foster innovation and grows into a world-class technology hub. Arizona is already attracting advanced transportation and electric vehicle manufacturing companies and has significant opportunity to be a leader in this growing economic sector. This is critical for the state's renewable energy transition. Beyond personal vehicles, electrifying delivery vehicles, 18-wheelers, public transit, school buses and ride-sharing services will result in cost savings for both the public and private sectors in Arizona.

Electric Transmission — Continue to support transmission development and construction that enhances Arizona's ability to participate in the energy market, deliver the planned new resources required to meet lofty 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.

Energy Planning — Adopt a more robust regional approach to energy development. New generation is being required each year as Arizona continues to grow. With large, high-demand markets in the broader region and introduction of the California Independent System Operator's Energy Imbalance Market, Arizona has a tremendous opportunity to prosper through regional cooperation. An increased focus on a regional approach can help to more seamlessly integrate the growing amount of renewable energy on the grid and could drive an increase in economical and low-cost, renewable energy. Changing customer needs such as increased integration of electric vehicles can place new demands on the way utilities provide power, making regional cooperation more important than ever.

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.

Technological Advances — Create a regulatory environment not just for today, but that encourages and embraces future technological advancement. There are growing trends towards smaller, highly efficient, distributed generation units, microgrids, smart grid 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.

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 the technology community. The broad and robust fintech community offers a diverse range of products and services with the potential of disruption for traditional financial services companies. 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 that meets the needs of Arizona's fintech sector where innovations primarily rely on this type of currency. Arizona must provide a robust, streamlined supervisory experience for virtual currency and non-bank firms that is transparent, provides a level playing field for businesses that doesn't favor larger players over small ones, and appropriately protects consumers from harm.

POSITIONS

Digital Signatures and Smart Contracts — Ease regulatory hurdles by updating Arizona statutes and regulations to enable 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. Lawmakers previously passed HB2417, the nation's 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. In 2018, the Legislature passed HB2603, 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 the fintech regulatory environment to stay on the forefront.

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. 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. Legislation adopted during the 2019 session provided important technical corrections and clarifications to the law to ensure efficient administration and robust oversight of the program. To date, eight fintech sandbox applicants have been admitted to test a wide array of innovations.

The Arizona Technology Council will work 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.

Proptech Regulatory Sandbox — Help improve and evolve the new property technology sandbox so Arizona can continue to take the 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. HB2673 approved in the 2019 legislative session 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.



FINANCIAL TECHNOLOGY (FINTECH) CONTINUED

Blockchain Research Funding — The ACA recently awarded \$1.25 million to support applied research development for blockchain technologies and products to help establish Arizona as a leader in this emerging sector. Additional funds should be allocated to recapitalize and sustain the blockchain research grant program to fund projects at research centers in support of defined products or services for commercial use.

Money Transmission Licensing (MTL) Regulation — Consider legislation on the application of Arizona MTL law to regulate digital tokens in concert with federal guidance and in cooperation with other states. The application of state MTL regulation should not hinge on the use of fiat currency to purchase a token. Instead, the sale of a digital token for fiat currency should be treated no differently than the sale of any other commodity. A number of states have acted to include or exclude cryptocurrencies or virtual currencies in their MTL laws using broad definitions that essentially include all digital tokens. In essence, this regulates the technology, not how it's used. Also, many tokenized projects currently may have a central issuer or administrator but will become a decentralized, user-run platform once operational, complicating the application of MTL and other state regulations. Pending federal actions regarding regulation of financial institutions should be closely tracked as they seek to clarify treatment of the wide array of digital tokens, optimizing Arizona's complimentary state MTL regulation evolution alongside that of the federal level.

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, renewable energy credits, tokenization, IoT, cybersecurity, and other applications for distributed ledger technologies on the grid. The Council will work with the Energy Blockchain Consortium's Arizona Working Group, formed to provide guidance, direction and coordination of blockchain technology use for Arizona's utilities, communities and businesses in the energy industry, as well as to promote collaboration among stakeholders and drive needed regulatory reform.

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; 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.

Regulatory Reciprocity Between States — Join the two dozen states already in 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 MTL 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.

Decentralized Corporate Structures — Continue to craft a policy foundation for decentralized companies and initiatives that break many of the legacy tenets of traditional corporate structures, identity frameworks and governance constructs, and transcend legacy geographic boundaries. Our global economy and enterprise ecosystem has been pushed into a new realm of decentralization. The global pandemic has forced new ways of conducting commerce and organizational interactions and created a daily routine of virtual communication media. This acceleration to global digital organizations heightens the importance of policy innovation that can give Arizona a competitive advantage to attract commerce from around the world as organizations actively seek policy-friendly locations where they can establish business operations that have clearly defined and innovation-enhancing public policy.

OPTICS, PHOTONICS AND ASTRONOMY

PRINCIPLE

Optics, photonics and astronomy are important economic drivers for Arizona. Combined, they add more than \$4.3 billion to the state's economy and support more than 19,000 jobs. 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 holds a worldwide leadership reputation for optics, photonics and astronomy as it provides the academic prowess for related research and development. These fields also attract and help retain world-class technical talent to the state. The output from optics R&D enables development of leading products and technologies that enable the many applications that drive robust Arizona companies. Astronomy assets also are heavily engaged in public outreach, as well as science, technology, engineering and math (STEM) education for residents and tourists alike.

The optics industry in Arizona is represented by the 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 through a contract with Council member Strategy1. The program consists of three primary elements: help existing optics companies scale-up and grow, facilitate the formation and development of new entrepreneurial optics companies, and enhance the visibility and community awareness of our world-leading optics industry.

One of the critical constraints to robust industry growth is the lack of a skilled workforce. The Wyant College of Optical Sciences at The University of Arizona is working hard to meet this need for professional personnel. In addition, Pima Community College is developing optics curriculum for technicians to build the sophisticated products that engineers design.

Other issues impacting optics range from protecting Arizona's celebrated dark skies, continued strong support for industry research and development, and promulgating commerce-friendly export control reform that promotes global export revenue growth. The policy positions below are intended to



support the goals of attracting future investments in optics, photonics and astronomy, and to grow a quality workforce.

POSITIONS

Workforce Development — Strengthen support and enhance funding for community college programs directed at education for technology careers, including optics and photonics. Continue support for JTED programs for preparation through community college and university programs, as well as direct entry to the workforce.

Dark-Sky — Establish statewide dark-sky standards and support the state's \$4.3 billion optics, photonics and astronomy industry. Advocate for and encourage dark-sky sensitive and appropriate use of LED technology for outdoor lighting as its use becomes increasingly widespread. Support the efforts of the growing number of Arizona communities working toward official International Dark Sky Community designation awarded by the International Dark-Sky Association headquartered in Tucson.

OPTICS, PHOTONICS AND ASTRONOMY CONTINUED

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.

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—the application of light—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, 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.

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



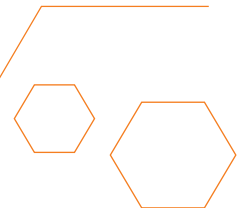
STATE BUDGET

PRINCIPLE

Arizona started 2020 with a budgetary surplus of \$1 billion. However, the pandemic greatly changed the financial outlook of the state to one of uncertainty. At the start of the pandemic, the experts estimated a budget shortfall between \$600 million and \$1.6 billion. As time went on, updated projections reduced the estimate. The Joint Legislative Budget Committee forecast shows FY2020 ending with a balance of \$373 million and a shortfall of \$62 million for FY2021. The committee acknowledges that these estimates are just that with many unanswered questions about the economic recovery. These numbers likely will change based on the activity over the next year, a vaccine and a possible second wave of COVID-19, and the FY2022 shortfall could be much larger than current projections.

Continuing the restoration of recession-era cuts to district and charter additional assistance funding in education is of utmost importance in the coming session while still meeting the other critical needs of the state budget. Although this may be a challenge with budgetary shortfalls, we need to work to ensure that any necessary cuts do not include Arizona's education system. Educating our youth to ensure they are ready to enter Arizona's workforce is essential to the state's recovery and continued success.

Competitive, business-friendly states are those that provide a stable and predictable environment for commerce. Of particular importance is a state budget and process that is strategic and reliable. The state budget should continue to avoid debt financing for operating expenses or use of fiscally unsustainable accounting gimmicks and ensure funding for Arizona's future. It should provide for the core needs of the state and reflect opportunities to leverage technology for greater efficiency and effectiveness of state government without sweeping funds from existing programs.



POSITIONS

Angel Investment Tax Credit Program — Protect the funding for the proven and highly successful Angel Investment Tax Credit and extend the program for another 10 years beyond the sunset date of June 30, 2021, which is discussed more in the Economic Development section.

Increase STEM Funding to Create Regional Ecosystem — Encourage state funding to cultivate a statewide Arizona science, technology, engineering and math (STEM) ecosystem. Focus on long-term, shared, sustainable, flexible STEM missions that bridge, integrate and strengthen the learning opportunities offered by organizations across sectors instead of isolated, independent entities. This will result in expansion of STEM business and education opportunities throughout rural and urban Arizona communities, fueling a strong, diverse talent pipeline prepared to meet the state's anticipated growth. Additionally, this investment could help attain additional federal funding for STEM in the state.

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 ACA's funding for programs to help it achieve its mission.

Education Funding — Prioritize increased and sustainable funding of the state's public education system at all levels—including pre-K, full-day kindergarten, K-12 and postsecondary—consistently and with accountability within 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 like Proposition 301's that positions Arizona at minimum with mean-level funding among the 50 states. Additionally, reforms should consider alternative ideas to appropriately fund pre- and full-day kindergarten, K-12, CTE, dual enrollment with equal access, universities and community colleges. 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.

Reinvest in Community Colleges — Recognize the critical role of community colleges in education and workforce development by supporting legislation that will reinvest in and restore state aid to all of Arizona's community colleges, and improve and expand the technical education offerings in community colleges. Explore opportunities to create partnerships between companies and community colleges to ensure industry needs are being met and the workforce develops the skills necessary for available jobs.

Protection of State Contracts with Vendors — Preserve and honor negotiated state government contracts, including with technology companies. The state is likely going to be looking for ways to save money due to facing a budget deficit. If cuts are needed, vendors should participate in an open process instead of unilateral changes made by the state or its agencies.



TAXATION

PRINCIPLE

Many taxes, especially those solely targeted at business, may have the effect of limiting potential growth in existing and new technology businesses. Policymakers 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

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.

Capital Gains — 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.

Data Centers — Protect Arizona's tax advantages in the exemptions given to promote the retention and expansion of enterprise and colocation 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.

Small Business Taxation — Promote a tax code that does not place an undue burden on small businesses to pay for specific state priorities. The tax structure should be fair, and priorities such as education should be funded through a reliable tax base and shared by all in the state. Seek opportunities to relieve the tax liabilities of small businesses struggling to recover from the pandemic and its aftermath.



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. The corridors should include roadways and telecommunications pathways coupled with rail and energy rights-of-way when appropriate. The onset of the pandemic and subsequent restrictions on public convening have exposed major gaps and deficiencies in the availability, reliability and affordability of broadband internet connections in society at large and in rural areas in particular. These conditions have existed since the broad adoption of the internet as a fundamental utility for commerce and communication but today's absolute dependency on the network as people work, interact and learn from home has exponentially increased the priority 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 in these times of pandemic emergency while at the same time poising ourselves for ongoing recovery and growth depends upon our robust capabilities to connect citizens, businesses and institutions via reliable high-speed broadband.

POSITIONS

Emerging Technologies — Continue to support Arizona Commerce Authority (ACA) initiatives such as the Institute of Automated Mobility and Smart State efforts in order to foster the advancement of Arizona's technology sector and drive the state's position as the leader in these areas. Advances in 5G, IoT, 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 unleashes the power of human creativity and ingenuity.

Broadband Regulatory Reform and Support Policies — Remove or reduce barriers generating unnecessary costs or delays and otherwise inhibiting expansion of privately funded, 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 attraction and retention, 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.

Continue to ease regulatory burdens and simplify processes for deployment of wireless sites and vertical infrastructure, including micro-cellular transceivers and distributed access systems (DAS) for necessary densification, in light of 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 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 Government Broadband Planning and Initiatives — Develop a statewide strategy and oversight mechanisms as the pandemic brings new waves of federal monies on top of traditional Federal Communications Commission/National Telecommunications and Information Administration and U.S. Department of Agriculture programs. One consideration is a Broadband Development Authority to coordinate and optimize Arizona communities, education institutions, nonprofit organizations and

TRANSPORTATION/DIGITAL INFRASTRUCTURE CONTINUED

broadband providers use of these digital-equity funding resources. Ensure a level playing field for incumbent and new entrant broadband providers. Provide up-to-date state broadband mapping capabilities to track broadband coverage and fiber deployments integrated with demographic and community anchor institution details. Make the data and mapping tools publicly available through the AZGEO Clearinghouse and open sourcing.

Play a substantial role in helping to 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. The Arizona State Land Department has relaxed regulations to allow broadband deployment in utility rights-of-way and should consider further reforms to encourage broadband deployment alongside electric grid infrastructure and in all utility corridors, ensuring fair costing and ready access to use state rights-of-way. Consider additional regulatory reform and incentives to further drive rural broadband deployment by electric cooperatives. The Legislature recently enabled cooperatives to deploy deep fiber and serve residential and enterprise broadband customers.

Pursue a minimum broadband download speed goal of 100 megabits per second (Mbps) to guide infrastructure investments and program implementation to the greatest extent practical. Although the Federal Communications Commission defines broadband as an internet connection at a speed of 25 Mbps download and 3 Mbps upload, this may be inadequate for data intensive applications such as IoT, telemedicine and eLearning that will have ever-increasing bandwidth requirements.

Identify funding for deployment of fiber along Interstate 40 and other strategic segments. Arizona's Smart Highways initiative is progressing rapidly with the recent \$40 million allocation by Gov. Doug Ducey to the state Department of Transportation to complete fiber builds between Flagstaff and Nogales on sections of Interstates 17 and 19. The department should develop its business model, engage a public-private partnership to manage these and other new fiber investments, and work towards

evolving Arizona's regulations to allow a wide range of public and private communication uses.

Continue strategic planning by the ACA and state to develop specific broadband implementation plans and initiatives that engage providers, communities, institutions and other stakeholders to generate actionable strategies while managing and driving the statewide expansion of broadband. The ACA should support regional and local governments in their planning efforts, identify opportunities for increased private broadband investment and deployment, and encourage public-private partnerships where advantageous. The Arizona Technology Council will work with the ACA, Office of the Governor and Arizona Department of Administration to help implement their strategic plans for broadband deployment to rural areas and digital access for all while helping drive regional and local government policies that encourage investment. That includes access to the use of right-of-way, infrastructure undergrounding requirements; mobile infrastructure expansion; and expedited/blanket building permit issuance.

Leveraging ACA and Other Broadband Grants — Empower the ACA to continue awarding and managing broadband grants to local partnerships and ventures with clear, achievable plans to provide or improve broadband services in unserved and under-served rural areas while also providing community assessments or technical designs, matching funds for federal and other grants, and specific project implementation investments. The ACA recently awarded \$3 million to provide matching funds to offset planning and construction costs for expanding broadband services. The state should recapitalize that funding via pandemic relief funds or legislative allotment for a follow-on tranche of \$10 million or more, and expand and sustain the broadband grant program.

Allow ACA's state broadband director to maximize and leverage the use of E-rate funding alongside the Arizona Department of Education and Arizona State Library, Archives and Public Records so they can help bring broadband services to the many rural schools and libraries with unresolved broadband issues. ACA should act as a clearinghouse to identify and line

up complementary broadband grants and other financial support. It 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 to serve rural residences, businesses, local governments, health care facilities and public safety.

Arizona's Community Role in Broadband — Activate broadband action teams to encourage local 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. To achieve common broadband goals, rural leaders must engage all interested parties, including service providers, governments of different jurisdictions, residents, business owners, utility service providers, landowners and other key parties. The Arizona Technology Council supports the Arizona Broadband Stakeholder Network as it facilitates opportunities for collaboration, coordination, information sharing and communication among key public, private and nonprofit stakeholders. In addition, the Council supports utilization of the Federal Reserve's Community Reinvestment Act funding for broadband and digital access remediation where applicable.

Arizona Corporation Commission — Examine and evolve the Arizona Corporation Commission'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.

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 colocation 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.

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



TRANSPORTATION/DIGITAL INFRASTRUCTURE CONTINUED

migrate to cloud services and use infrastructure, platform 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.

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 all in 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 Arizona Technology 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.

Modern Surface Transportation System — 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, 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 rights of way and facilities. Modernization should also include technology upgrades to support smart transportation systems and vehicles. Lack of transportation funding makes these types of improvements challenging. 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.

Intelligent Transportation — Incorporate the use of intelligent transportation systems (ITS) to help manage surface transportation traffic, maximize

existing infrastructure and minimize congestion and incidents. The general lack of transportation funding, however, 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.

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.

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. Support legislation to codify in statute the governor's executive action concerning autonomous vehicles.

Transportation Funding Formula — Support reforming the formula to improve transportation funding needs across the state. The current formula is nearly 30 years old and today provides a fraction of the funding level originally intended. Since 2013, 30 states have increased their fuel taxes, leaving Arizona far behind those not experiencing nearly the growth rate in our state. Rural communities and the highways connecting Arizona to the world outside of the urban areas have been particularly hit hard by the lack of a modern funding formula. The deteriorating condition of major highways indicates the lack of adequate funding to maintain and expand major corridors.

Arizona 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. To help, the state should encourage:

- **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.
- **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. The 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 military to transition into these enforcement jobs.
- **Recognition 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.
- **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 time to

cross the border. Similar improvements such as more collaborative truck inspections processes between Arizona Department of Transportation and federal authorities can reduce the need for physical infrastructure and improve crossing times.

- **Long-term Planning** — Work with executive and legislative leadership, 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.
- **Transportation in Support of International Trade** — The U.S. Department of Transportation should continue to support the states on the southern and northern borders with 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, much of which simply passes through and benefits all 50 states.



UNIVERSITIES AND HIGHER EDUCATION

PRINCIPLE

The Arizona Technology Council actively works to support Arizona's universities and improve the technology infrastructure upon which they rely. Its 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 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' state budget requests and legislative priorities, secure the state's financial relationship with the university system as one that is based on per resident student funding, and obtain support for critical capital.

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.

Sun Corridor Network — Encourage policies to enable the Sun Corridor Network, Arizona universities' research and education collaborative network, to flourish and expand services to a broader base of users. A robust Sun Corridor Network 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 K-20 education technology infrastructure is essential to enable modern digital-learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.

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 K-20 community. Support the network's participation in the 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—Arizona State University, The University of Arizona and Northern Arizona University—to bring better and lower-cost internet and Internet2 access to K-12 schools, community colleges, universities, tribal nations, government entities and other institutions 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.





2021

ARIZONA TECHNOLOGY COUNCIL LEGISLATIVE PRIORITIES

- Reauthorize and extend the Angel Investment Tax Credit program for another 10 years.
- Look for opportunities to cultivate a diverse, equitable statewide Arizona science, technology, engineering and math (STEM) ecosystem. 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. This will result in expansion of STEM business and education opportunities throughout rural and urban Arizona communities, fueling a strong, diverse talent pipeline prepared to meet the state's anticipated growth.
- Consistently, equitably and sustainably fund the state's P-20 education system, including pre-K, K-12, career and technical education district (CTED), equitable access to dual enrollment, and postsecondary programs. Support a funding formula that addresses the achievement gap for those students in lower socio-economic areas and ensures access to the proper infrastructure for supporting distance learning models.
- Support policies directed at helping the business community, especially small businesses, recover from the pandemic and our workforce prepare for the pandemic and post-pandemic working environment.



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 sophisticated. AI can be applied in ways that help society tackle some of its biggest problems. It can be harnessed to make driving safer and medical diagnoses more accurate, fight human trafficking, counter cyberattacks, unleash scientific discovery, enable farmers to increase crop yields, help investors maximize returns, and help athletes prevent injury. Moreover, AI will augment human abilities in ways that increase productivity, which will foster widescale economic progress.

At the same time, AI will present new ethical challenges and automate broad categories of jobs, which will cause fundamental shifts in the ways people live and work. To make sure we can harness all of AI's benefits while easing any negative impacts, governments must pursue policies that enable the continued development of AI technologies, mitigate any impacts from increased automation and protect individual rights and freedoms.

POSITIONS

Foster Innovation and Open Development — 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 (R&D). Governments should support the controlled testing of AI systems to help industry, academia and other stakeholders improve the technology.

- **Fuel AI innovation** — Public policy should promote investment, make available funds for R&D and address barriers to adoption.
- **Address Global Societal Challenges** — AI-powered flagship initiatives should be funded to find solutions to the world's greatest challenges such as curing cancer, ensuring food security, controlling climate change and achieving inclusive economic growth.

- **Allow for Experimentation** — Governments should create the conditions necessary for the controlled testing and experimentation of AI in the real world, such as designating self-driving test sites in cities.
- **Prepare a Workforce for AI** — Governments should create incentives for students to pursue courses of study that will allow them to create the next generation of AI.
- **Lead by Example** — Governments should lead the way to demonstrate the applications of AI in its interactions with citizens and invest sufficiently in infrastructure to support and deliver AI-based services.
- **Partnering for AI** — Governments should partner with industry, academia and other stakeholders for the promotion of AI and debate ways to maximize its benefits for the economy.

Create New Human Employment Opportunities and Protect People's Welfare: AI will change the way people work. Public policy in support of adding skills to the workforce and promoting employment across different sectors should enhance employment opportunities while also protecting people's welfare.

- **Encouraging Human Employment** — Governments should 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.
- **Retraining** — Governments should implement policies that support the upskilling and reskilling of the 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 guided computation in which individuals direct and oversee the operation of the technology.

Liberate Data Responsibly — Data access is imperative to achieve more enhanced AI model development and training. Removing barriers to the access of data will help machine learning and deep learning reach their full potential.

- **Keep Data Moving** — Governments should eliminate unwarranted data localization mandates and enable secure international data transfers through international agreements and legal tools.
- **Open Public Data** — While protecting privacy, governments should make useful datasets publicly available when appropriate, and provide guidance to startups and small and medium businesses for its reuse.
- **Support the Creation of Reliable Datasets to Test Algorithms** — Governments should explore non-regulatory methods to encourage the development of testing datasets.
- **Federate Access to Data** — Governments should partner with industry to promote AI tools to access encrypted data for analysis while not requiring transfer of the data.

Rethink Privacy — Privacy approaches like the Fair Information Practice Principles and Privacy by Design have withstood the test of time and the evolution of new technology. But with innovation, we have had to rethink how we apply these models to new technology.

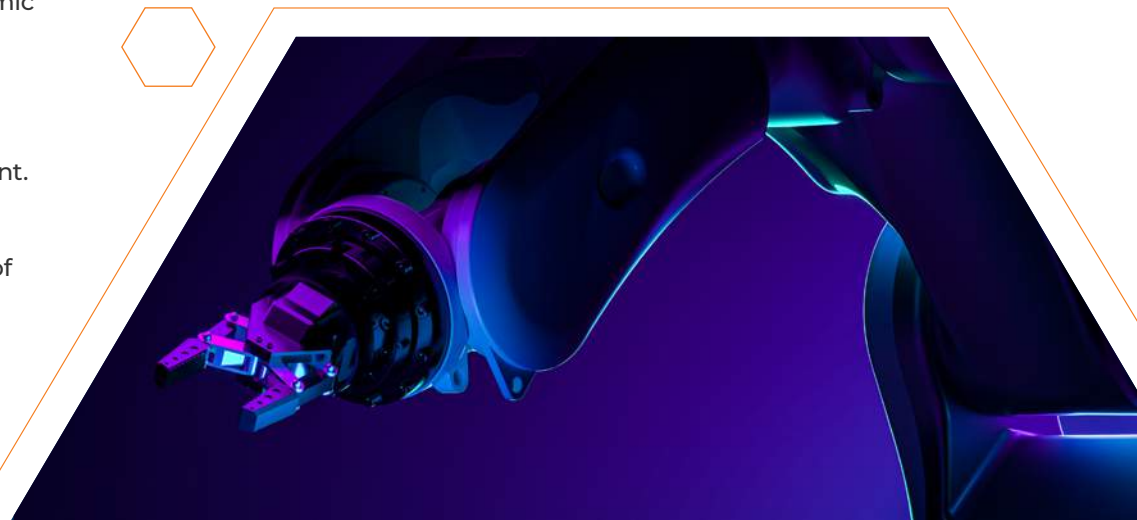
- **Adopt Robust Privacy Laws** — Based on the Organization for Economic Co-operation and Development (OECD) Fair Information Practice Principles.
- **Implement Privacy by Design** — Rethink privacy approaches to implement Privacy by Design into AI product and project development.
- **Keep Data Secure** — Policies should help enable cutting-edge AI technology with robust cyber and physical security to mitigate risks of attacks and promote trust from society.
- **It Takes Data for AI to Protect Data** — Governments should adopt policies to reduce barriers to the sharing of data for cybersecurity

purposes.

Require Accountability for Ethical 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 the use of AI and encourage designing in protections against these harms.

- **Standing for Accountable Artificial Intelligence** — 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.
- **Transparent Decisions** — Governments should determine which AI implementations require algorithm explainability to mitigate discrimination and harm to individuals.

As AI continues to advance and become increasingly deployed and utilized, these principles and recommendations will continue to evolve. This is just the first step towards the Arizona Technology Council engaging in AI policy discussions with governments and other organizations regionally and nationally.



CYBERSECURITY

PRINCIPLE

Digital resilience and cybersecurity are key priorities at the global, federal, state and local levels. As the world grows increasingly interconnected and the functions of our governments, businesses and lives increasingly rely on connected systems, managing cybersecurity risk while building trust and spurring innovation is essential. To that end, the Council supports a risk-based approach to cybersecurity policy rooted in partnership between public and private organizations and across sectors. We support frameworks that help entities identify, manage and communicate risk to foster a more resilient cyber ecosystem while enabling and incentivizing organizations to develop innovative cybersecurity solutions moving forward.

POSITIONS

Supply Chain Security — The Arizona Technology Council supports U.S. government efforts to enhance the security and reliability of software, firmware and hardware supply chains through transparent partnerships with the private sector.

- Coordinated, whole-of-government efforts to develop clearly defined policies and standards for objectively assessing supply chain risk and security.
- 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.
- Federal Acquisition Security Council/U.S. Department of Homeland Security's Information and Communications Technology Supply Chain Risk Management Task Force.
- Legislation (e.g., United States 5G Leadership Act of 2019) that preserves national security while spurring innovation in a globalized economy.
- Transparent refinement and adoption of the U.S. Department of Defense's Cybersecurity Maturity Model Certification while continuing to track, assess and spread awareness of its impact on Arizona's defense industrial base.

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.

- Passage of the IoT Cybersecurity Improvement Act.
- Development of the National Institute of Standards and Technology 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.

5G Security — The Council supports rapid deployment of 5G infrastructure utilizing trusted sources of supply.

- 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.

Other

- Incentives and investment in innovative cybersecurity R&D.
- Monitoring European Union Agency for Cybersecurity.



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 widely been 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 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. The technology brings significant efficiencies to not only currency and financial transactions but also asset ledgers, global supply chains, IoT data collection and decentralized social networking.

POSITIONS

The Arizona Technology Council suggests 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, the uses and the 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. But if conducted properly, ICOs 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 the market. Unfortunately, the Framework for Investment Contract Analysis of Digital Assets issued by the U.S. Securities and Exchange Commission (SEC) in spring 2019 did little to clarify the circumstances in which a token sale will be treated by the agency 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 legislative 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, as well as non-security token sales.

FINANCIAL TECHNOLOGY (FINTECH) CONTINUED

- **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 state and 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 nationwide and internationally, ensuring legal and regulatory reciprocity between participating jurisdictions.
- **Creation of a Federal Blockchain Stakeholders Working Group** — The Council, along with a broad coalition of national, state and regional technology councils, strongly support the Blockchain Promotion Act of 2019 (H.R. 1361/S. 553) and urge Congress to pass this important legislation directing the U.S. Department of Commerce to establish a blockchain working group that recommends a consensus-based definition of the technology. The working group also would develop recommendations for the National Telecommunications and Information Administration and Federal Communications Commission to examine marketplace opportunities; support of current and future security requirements, standards and interoperability; and the potential impact of blockchain on spectrum policy, as well as promote the adoption of blockchain to promote efficiencies within the federal government.
- **Blockchain Pilot Toolkit** — The Council recommends a relevant national trade organization champion the development and use of a pilot toolkit, providing standardized, effective methods to help incorporate blockchain technology in business processes and products. When considering the creation of such a toolkit, the focus should be on:
 - Reasons why your organization would need blockchain.
 - Workings of the blockchain protocol and technological framework options.
 - Your organization’s information technology environment and product offerings.
 - How to develop sophisticated applications with open source toolkits and resources.
- **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.



DATA BREACH NOTIFICATION

PRINCIPLE

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 different, often conflicting, regularly changing notification laws for each state in the aftermath of a breach. With the increasingly mobile and decentralized nature of our economy, data storage and dissemination technologies, it can be nearly impossible for companies to determine which state laws apply when a breach occurs. 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: customers whose data was compromised.

POSITIONS

A national standard for data breach notification would provide consumers and businesses with consistency and predictability on how consumer notice must be provided. Until Congress passes a national standard, the Arizona Technology Council and its membership continue to advocate for the following in breach notice bills:

- **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 aren't harmful.
- **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 have suffered breaches are victims of criminal activity.
- **Narrow Definition of Personal Information** — To avoid excessive notification of consumers and unnecessary costs, the definition of personal information in the 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.
- **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. This exemption should be technology-neutral.
- **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.
- **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.
- **Reasonable Notification Time Frame** — Legislation should require a reasonable time frame for notification, which would include allowances for risk assessment without requiring a specific time limit that must apply to every case.
- **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 or the Fair Credit Reporting Act should be exempt from these requirements.

DIGITAL GOODS AND SERVICES

PRINCIPLE

The digital economy continues to play a strong role in both the growth of the internet and the ability for businesses to better deliver digital goods and services. This is even more true following the onset of the COVID-19 pandemic.

Given the importance of the digital economy to the Arizona Technology Council's member companies and the need to ensure we can continue to foster innovation and economic growth within this sector, the Council strongly supports the Digital Goods and Services Tax Fairness Act. This legislation will prevent hurdles to growth and create a much-needed tax framework that will provide certainty to consumers, providers and state/local governments while preventing duplicative and discriminatory taxes.

The Council opposes taxes on digital products. However, for those jurisdictions that have opted to impose these taxes, we recognize the need to provide consistency and simplicity across state borders. There should never be a situation when multiple jurisdictions can tax the same digital good or service, and a framework must be established to ensure that a single purchase is sourced in one state, not multiple states.

POSITIONS

The Council supports legislation such as the Digital Goods and Services Tax Fairness Act. This legislation would provide consistency in determining which jurisdiction can tax a transaction (at the appropriate sales tax rate) and prohibit unfair and unrelated discriminatory taxes. While the Council opposes taxes on digital products, we do support legislation that would provide consistent treatment across state lines when digital products are taxed by state or local jurisdictions. The Digital Goods and Services Tax Fairness Act addresses our concerns by accomplishing two key objectives:

- The legislation sources the purchase of a digital good or service to the consumer's home address, not the location of the consumer at the time of downloading a product or the location of the server. Therefore, only one state would have the ability to tax the transaction—if that state chose to do so. Congress took a similar approach in 2000 when it passed the Mobile Telecom Sourcing Act, which essentially sourced wireless and mobile telecommunications services to the consumer's home address to eliminate confusion around which taxing jurisdiction had the right to tax wireless services.
- The legislation would prohibit discriminatory taxes. If a state decides to tax a downloadable song, for example, the rate should be the same as if that same song was purchased in a "brick and mortar" store. Prohibiting discriminatory taxes simply brings parity between digital products and their tangible counterparts.

Consistent with our support for the Digital Goods and Services Tax Fairness Act, the Council calls on states to reject new taxes on electronically transferred digital products and electronically delivered services such as data processing, hosting and related services. Such a broad expansion of the sales tax base to include electronically transferred goods and services, particularly those that are actually business inputs, is bad public policy and will result in multiple and discriminatory taxation.



IMMIGRATION REFORM

PRINCIPLE

Our current immigration system is broken and causing the United States to lag behind 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

Increase Green Cards for High-Skilled STEM Graduates — The Arizona Technology Council supports increased access to permanent resident, or green cards, for high-skilled 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 IT-related jobs currently open, furthering opportunities for starting and growing new businesses in the United States.

Market-Based Visa Caps — Using market-based caps on H1B visas are the best way to adjust to the supply and demand in the U.S. economy.

Growing Domestic Sources of Talent — The Council and its member companies are strongly committed to improving U.S. science, technology, engineering and mathematics (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 students from kindergarten through high school with a structured pipeline to higher education. The Council is uniquely positioned at the intersection of innovation, education and economic growth. We support policies that expand lifelong education and promote a skilled workforce that spurs job growth and the ability to compete globally. Quality education, 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 policy makers and regulators to tread lightly in this space, which is still in an early stage of development, so innovation and the attendant societal benefits will continue to flourish.

POSITIONS

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 (NTIA) IoT security multi-stakeholder process as well as the National Institute of Standards and Technology's IoT Cybersecurity Framework.

Broadband — 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.

Spectrum — 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.

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 and state governments consider creating IoT regulatory sandboxes. These sandboxes 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.

Privacy and Data Security — Congress should avoid broad IoT-specific legislation regarding companies' privacy and data security practices. A number of federal and state privacy and data security laws and guidelines are already on the books and provide a sufficient framework to regulate IoT at this time. 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.

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.

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. Of particular interest are grants focusing on cyber-related IoT R&D.

Governance — 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 Department of Commerce that incorporates all federal agency stakeholders.

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 in 1995 was defunded, stripping 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—we are experiencing the repercussions of the decision to defund this vital piece of the congressional support system.

The Arizona Technology Council believes introduction of the Office of Technology Assessment 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.

POSITIONS

The Council supports the bill's introducing 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 General Accounting 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.

PRIVACY

PRINCIPLE

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

POSITIONS

- Advocate for the enactment of comprehensive federal privacy legislation that preempts state privacy laws and protects consumer privacy without hampering innovation.
- Advocate for the protection of platform website hosts from the liability of content posted by their users through the continuation of Section 230 of the Communications Decency Act.
- Support a national standard for data breach notification so entities can focus on notification and resolving the breach instead of compliance with myriad conflicting laws.
- Support continued innovation in encryption technologies and work with Congress and law enforcement to establish frameworks for securing data while exploring collaborative approaches that help law enforcement to keep Americans safe.
- Advocate for data policies that allow for technological advancements in emerging areas like artificial intelligence (AI), biometric technologies and geolocation.
- Promote innovation through the responsible and ethical design and deployment of data in AI systems.
- Advocate for interoperability and even enforcement of the European Union General Data Protection Regulation and continued renewal of the EU-U.S. Privacy Shield.
- Advocate for global data approaches in key international markets that do not discriminate or create prohibitive regulatory requirements for technology companies.



FEDERAL GOVERNMENT INVESTMENT IN RESEARCH AND DEVELOPMENT

PRINCIPLE

We are living in an era when innovation, agility and imagination are all essential in order 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 Under Secretary of Defense for Research and Engineering, has placed an emphasis on emerging technology with supporting 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 and partners in programs and solutions for some of our greatest challenges, including cybersecurity, smart cities, big data, quantum computing, space exploration, health and medicine, blockchain, artificial intelligence and the Internet of Things. Continued R&D investment will help drive innovation and spur competitiveness.

POSITIONS

The Arizona Technology Council supports increases in R&D funding that encourage advancements in big data, cloud computing, high performance computing, automation, artificial intelligence, biometrics, blockchain technology and cybersecurity (as it relates to emerging technologies and services). In particular, the Council supports increases to the following federal R&D budgets:

- **Networking and Information Technology Research and Development Program** — NITRD is a federally funded program 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 as long as it has an adequate budget.
- **Defense Advanced Research Projects Agency** — DARPA has helped drive innovation on a number of issues, including connected vehicles, spectrum, cybersecurity, the Internet of Things and blockchain technology.
- **National Labs and Federally Funded Research and Development Centers** — FFRDCs are the nation’s R&D incubators and have compiled a treasure trove of technologies and applications for defense and the 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** — Congress has begun to recognize the importance of new and enhanced technologies in our daily lives. To that end, Congress has formed the bipartisan, bicameral congressional Optics and Photonics Caucus co-chaired by Sens. Kyrsten Sinema (D-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 U.S. economy, security and scientific excellence. It also will 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.



REFORM THE ELECTRONIC COMMUNICATIONS PRIVACY ACT

PRINCIPLE

The Electronic Communications Privacy Act (ECPA) was originally passed in 1986 when email and text messaging were still nascent technologies and deemed all stored electronic communications over 180 days old to be abandoned. Under ECPA, law enforcement and government agencies can acquire these abandoned emails and text messages from a service provider without a warrant but simply with a subpoena to obtain access. The House unanimously passed the Email Privacy Act, an ECPA reform bill, in both April 2016 and February 2017 but the bill has repeatedly stalled in the Senate Judiciary Committee and hasn't received a floor vote.

POSITIONS

The ECPA must be reformed to require government agencies and law enforcement to obtain a warrant to compel service providers to disclose the contents of emails, text messages and other private communications stored by a service provider.

Specifically, the Arizona Technology Council supports:

- **Congress Should Pass the Email Privacy Act as Passed by the House in 2017** — 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 have continued to hold up the bill with unrelated amendments opposed by both industry and the public interest community. Congress should pass this bill in 2021.
- **No Civil Agency Exceptions** — Some civil agencies such as the SEC 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 ECPA 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 situation. 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 don't 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.



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 cities and communities 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 products and services. The Arizona Technology Council supports the Smart Cities and Communities Act of 2017, whose primary focus is to help coordinate the various federal agency smart city initiatives, as well as create a technology demonstration grant program. The Council also supports the Smart Technology for Resilient, Efficient, Economic and Reliable Transportation in Cities and Communities (STREET) Act that will 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.

State-Led Smart Community Planning Funds — Most cities greater than 750,000 in population have at least one but usually multiple smart city projects underway in one sector or another. But few cities and communities have comprehensive, long-term, integrated plans. In fact, there are only a handful of cities worldwide well on their way to a full adoption of smart cities 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.

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're 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 to the region's shared civic challenges at scale. The Council supports the work being done by The Connective, 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

SMART CITIES AND COMMUNITIES CONTINUED

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.

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 derisking 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 establish their unique comparative advantages and core competencies that help support the region as a whole.

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 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 the citizen 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 the 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

The COVID-19 pandemic has exposed major gaps and deficiencies in the availability, affordability and reliability of broadband internet connections in the United States at large and in rural and tribal areas in particular. These underlying conditions have existed since the broad adoption of the internet as a fundamental utility for commerce and communication. The pandemic, however, 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, funding and deploying communications services, including their remote settings, sparse population densities, and no or minimal access to middle mile and long-haul fiber connections.

The federal government recognized these mounting needs as reflected in recent, precedent-setting broadband policies focused on new investment and regulatory reforms. With the pandemic continuing to drive an exponential increase in citizen, business and institutional broadband needs, 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 & Information Administration (NTIA), an R&D agency of the U.S. Department of Commerce, along with the U.S. 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, as well as project and industry oversight. The federal government should work to simplify and reform industry regulation while streamlining the processes and management burdens through which grants and loans are handled.

Minimum Broadband Speeds — The FCC, NTIA, RUS and other agencies should pursue a minimum broadband speed goal of 100 megabits per second (Mbps) download and at least 10 Mbps upload to guide infrastructure investments and program implementation to the greatest extent practical. Many broadband applications that promote rural, economic and community prosperity rely on speeds greater than the current 25/3 Mbps standard,

especially telehealth, e-learning, business and other applications that upload large amounts of data. A scalable standard should be employed as application bandwidth needs and network capacity continue to grow.

Broadband Mapping and Grant/Loan Determinants — High-quality data is necessary to ensure public broadband investments and deployment efforts correctly prioritize areas that wholly or significantly lack access and are cost-effective. During the past decade, significant state and national broadband mapping efforts have been made, but they have been fraught with inaccuracies and issues. Under its current Form 477 reporting protocols, the FCC considers a census block served if a single residence in the block has access to broadband, which tends to grossly overstate broadband availability in larger, rural census blocks. The FCC's use of "maximum advertised," not actual speeds when mapping broadband coverage further distorts reporting on the broadband speeds customers do receive. Inaccurate or overstated data prevents businesses, local governments and other entities from applying for and securing federal funds to assist under-served or unserved communities.

The Broadband Deployment Accuracy and Technological Availability (DATA) Act (S.1822) was enacted in March 2020 to require the FCC to change the way broadband data is collected, verified and reported. The FCC must now collect and disseminate much more granular broadband service availability data from wired, fixed-wireless, mobile and satellite broadband providers under a broadband serviceable location fabric atop which broadband maps can be overlaid to report detailed and accurate broadband service availability data by location. With congressional funding, the FCC should proceed as rapidly as practical to partner with state broadband offices and representatives who can offer invaluable information and on-the-ground perspectives regarding broadband coverage in their states. The FCC also must create better public mapping tools with exemplary user interfaces and experiences, high accuracy assurances, information on available providers and services, location and characteristics of community anchor institutions, and the overlay of demographic and open source data sets.

Federal Grants and Loans — Congress should ramp up 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 respond to the pandemic and commit to substantial new broadband infrastructure funding, it must be accompanied by agency and program process reform. There also should be reconsideration of long-standing barriers, including areas being incorrectly identified as "served" on broadband coverage maps, revisiting the concepts and metrics for unserved and under-served, excessive application and reporting procedures, and significant match or cash-on-hand requirements.

The USDA's ReConnect Program contains a requirement that areas designated to receive support through the FCC's Connect America Fund Phase II can only pursue ReConnect funding through the entity that is receiving FCC assistance. This is an example of the kind of restriction that should be reformed since it inherently limits deployment of adequate broadband capability in many rural areas.

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 under-served 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. 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. The FCC should provide consistent funding for Category Two equipment and services while continuing to expand what is covered including adding coverage for necessary network security equipment and services. In addition, it should offer something similar to the recent E-Rate two-year special build program in which 17 states including Arizona that provided 10% matching funds were able to leverage hundreds of millions of dollars in new fiber infrastructure project funding to reach under-served

BROADBAND REFORMS AND INITIATIVES ACROSS FEDERAL AGENCIES CONTINUED

rural schools and libraries. The FCC also should improve the Form 470 drop-down menu to eliminate applicant and service provider confusion, streamline and strengthen the competitive bidding process and clarify the transition of services and the 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 safeguard and improve the USF by reforming High Cost Support Mechanism and Low Income Support Mechanism currently geared only to legacy POTS telephone support to allow for broadband deployment support in similar circumstances. The FCC should give applicants the option to seek funding from the E-rate and RHC programs in a single application, reject the proposal to place an overall cap on the entire USF, and replace the outdated contribution mechanism with a more stable, long-term funding source for the USF.

Reform the Rural Health Care Program — Congress should substantially increase funding based on demand data and the FCC to improve the administration of its Rural Health Care (RHC) program that currently suffers from insufficient funding and a slow, cumbersome administrative process. The FCC and USAC should process RHC program applications faster with more transparency. The FCC should establish rates based on competitive market forces and actual costs. RHC program rules should be reformed to no longer discriminate against consortia.

Land Management and Rights of Way — Federal land management agencies—particularly the U.S. Forest Service, Bureau of Land Management and Bureau of Indian Affairs—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, 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 multi-jurisdictional project planning and permitting, which has traditionally presented obstacles to private and public investment.

Wireless Siting — FCC wireless siting reform is key to U.S. 5G leadership. As wireless providers are preparing to invest hundreds of billions of dollars in these new networks, the escalating costs and burdensome procedures 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 all the more critical. 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 full-fledged 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 common carriage and cannot be regulated as if it is. Congress should settle the net neutrality debate by giving the FCC new authority over broadband to craft rules around blocking, throttling and prioritization. The FCC should be allowed to settle the long-running net neutrality debate by locking in widely agreed upon protections

for internet traffic with clear rules of the road 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 up new applications and markets in innovative and dynamic ways as Wi-Fi has ably demonstrated.

Wireless broadband use has skyrocketed in recent years, even more so during the pandemic. 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 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, 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 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, as well as 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.



CONGRESSIONAL BROADBAND REFORMS AND INITIATIVES

PRINCIPLE

Congress holds the power of the purse, as well as 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

One-Off Rural Broadband Acceleration Funding — As part of the federal government's pandemic relief assistance, Congress should allocate one-time funding focused on accelerating rural broadband infrastructure deployment in genuinely unserved and under-served areas where the economic benefit from increased connectivity is greatest, and use a multi-pronged approach building on existing agencies and their programs.

Broadband Block Grants to the States — Beyond providing substantial additional funding for traditional federal agency broadband grant and loan programs, Congress should allocate ample block grants to each state and territory for their executive branches to prioritize, distribute and manage in addressing general broadband infrastructure issues and responding to digital access and digital equity challenges their constituents are facing during the COVID-19 pandemic.

Broadband Subsidies Direct to Citizens — Congress and the FCC should establish a robust subsidy program to help low-income Americans gain connectivity, ideally through a simple and streamlined voucher or waiver system underwriting their broadband access costs.

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.

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.

Electric Cooperatives Take the Field — Federal agencies should be encouraged to continue expanding the eligibility of electric and telephone cooperatives to pursue USDA 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.

Leverage CAI-Funded Connections to Communities — Federal programs often direct broadband infrastructure funding to community anchor institutions (CAI) 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). Also, 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:

- Improve access to capital and provide expanded support mechanisms for high-growth businesses.

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. Specifically, the Council supports the Digital Goods and Services Tax Fairness Act (S. 765/H.R. 1725).
- Reduce compliance burdens on today's digital workforce by supporting legislation that simplifies nonresident employee and employer requirements to report and withhold state income taxes. Specifically, the Council supports the Mobile Workforce State Income Tax Simplification Act (S. 604).
- Support interstate tax fairness by treating digital products the same as tangible goods. Specifically, the Council supports the Business Activity Tax Simplification Act (H.R. 3063).



USE OF CONSUMER AND ENTERPRISE UNMANNED AERIAL 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. UAV innovation is occurring at a breakneck pace. However, regulations are not in place currently to allow UAV use in many innovative ways. The Federal Aviation Administration (FAA) released its Small UAS Rule in June 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 a number of enterprise purposes.

POSITIONS

The Arizona Technology Council supports a much broader use of UAVs than the FAA permits in its new rules. Congress and the FAA have demonstrated interest in crafting rules for enterprise uses of drones 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 enterprise UAVs 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 of UAVs.

The Council supports and advocates for policy changes that will not only embrace but encourage the growth of the UAV 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 unmanned aircraft systems (UAS) access to commercial mobile services and unlicensed spectrum vital to the safe and widespread integration of UAS.
- Embrace the carriage and delivery potential of UAV technology in a wide array of capacities ranging from humanitarian aid to commercial operations.

The Council believes 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 use of UAVs, and advocates for risk-based regulations that allow the safe and expedited integration of small UAVs into the national air space.



GLOBAL TRADE AND MARKET ACCESS

PRINCIPLE

Technology exports reached an estimated \$338 billion in 2018 and directly supported an estimated 885,000 American jobs. Further, exports account for approximately \$1 out of every \$4 generated in the nation's technology industry. For additional growth, market opportunities should be expanded worldwide, tariff and non-tariff barriers reduced, 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 U.S. technology sector, prevent or eliminate trade barriers, and boost the global competitiveness of the industry.

- **USMCA** — Support full implementation of the U.S.-Mexico-Canada Agreement signed into law July 2020.
- **China** — Advocate our position on Section 301 and additional trade remedies and resulting tariffs. Advocate for stability between the United States and China, including de-escalation of the trade war, and a finalized agreement that achieves tariff removal to restore confidence and predictability in the trade relationship and global economy.
- **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.
- **Digital Trade** — 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 securely across borders to maintain operations, reach customers and compete.

- **Trade Agreements** — Advocate for the rapid expansion of bilateral and multilateral free trade agreements with other nations. The immediate targets should be Japan, the European Union and the United Kingdom; possible reentry into the Trans-Pacific Partnership; and possible additional agreements with Kenya, Brazil and India. The advocacy focus should be to ensure inclusion of robust technology provisions in any agreements, including strong digital trade 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 parties 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

GLOBAL TRADE AND MARKET ACCESS CONTINUED

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.
- **Ex-Im Bank** — Continue to support Ex-Im 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 Ex-Im support.
- **Foreign Direct Investment** — Promote a trade and regulatory environment that attracts foreign direct investment into the United States, particularly in areas that generate high-wage job creation.

- **U.S. and Foreign Commercial Service** — Advocate 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.
- **International Organizations** — Advocate support for international and multilateral organizations that underpin a system of global cooperation in the areas of trade and security, including the World Trade Organization, North Atlantic Treaty Organization and United Nations.
- **Reduction of Tariff and Non-Tariff Barriers to Trade** — Promote the development of trade policy positions that reduce the use of tariff and non-tariff barriers.
- **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. 1733/S. 777) and the Cyber Ready Workforce Act (H.R. 2721/S. 1466).
- Increase the deployment and adoption of private sector-led initiatives that align with local and regional workforce demands and developing trends in the industry.

Modernize the education system.

- Make targeted P-20 STEM investments to ensure students of all ages can benefit from the digital economy.
- Support and develop initiatives that encourage underrepresented communities and veterans to pursue IT career paths.
- Increase the adoption of experiential learning.

Recognize 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 or gender identity.





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.

PHOENIX

2800 N. Central Ave., Suite 1530
Phoenix, Arizona 85004
602.343.8324

TUCSON

1215 E. Pennsylvania St., Suite 122
Tucson, AZ 85714
520.388.5761

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