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 our 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 calling for a technology-based, pro-growth, business-focused agenda.

The Council and its Public Policy Committee hereby submit the 2018 Public Policy Guide. In creating this document, the Committee relied heavily on the Council’s mission by preparing key ideas, goals and legislative initiatives that:

- Improve the business climate for technology-based companies
- Provide sources of risk capital that encourage entrepreneurship
- Create an environment that supports science- and technology-related job retention and creation
- Attract, train and retain the talent required to compete in a global innovation economy

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 2018. In some cases, the positions will advance through development and advocacy of legislation that will be introduced during the Arizona Legislature’s 2018 session. In other instances, the positions will be used on an ongoing basis as regulations introduce new rules 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 affect Arizonans and the Arizona economy for years to come.

ARIZONA TECHNOLOGY COUNCIL STATE LEGISLATIVE PRIORITIES – 2018

- Restore the fourth-year funding for career and technical education (CTE)
- Appropriately fund the state’s education system, including Pre-K, K-12, joint technical-education district (JTED), career and technical education (CTE), and postsecondary programs
- Create and fund a job training program
- Make changes to the Refundable R & D Tax Credit that make it accessible to more small businesses

STATE POLICY PRINCIPLES AND POSITIONS

<table>
<thead>
<tr>
<th>Aerospace, Aviation &amp; Defense</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosciences and Health Care</td>
<td>4</td>
</tr>
<tr>
<td>Biosciences and Health Care: Telehealth</td>
<td>5</td>
</tr>
<tr>
<td>Capital Formation</td>
<td>6</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>8</td>
</tr>
<tr>
<td>Economic Development</td>
<td>9</td>
</tr>
<tr>
<td>Education, Workplace, and Workplace</td>
<td>10</td>
</tr>
<tr>
<td>Energy</td>
<td>11</td>
</tr>
<tr>
<td>Financial Technology</td>
<td>15</td>
</tr>
<tr>
<td>Optics, Photonics, and Astronomy</td>
<td>17</td>
</tr>
<tr>
<td>State Budget</td>
<td>18</td>
</tr>
<tr>
<td>Taxation</td>
<td>19</td>
</tr>
<tr>
<td>Transportation/Digital Infrastructure</td>
<td>20</td>
</tr>
<tr>
<td>Universities and Higher Education</td>
<td>22</td>
</tr>
</tbody>
</table>

FEDERAL PRINCIPLES & POLICY POSITIONS

21st Century Workforce
Support Skills for the 21st Century Workforce .......................................................... 24
STEM Education .......................................................................................... 25
Workforce Development .................................................................................. 26
Immigration Reform ...................................................................................... 27
Workplace ...................................................................................................... 29
Biosciences and Health Care
Medical Device Tax Repeal ........................................................................ 30
New and Emerging Tech
Support New and Emerging Technology Platforms through Thoughtful Policies .................................................. 31
Artificial Intelligence ..................................................................................... 32
Federal Government Investment
In Research and Development ........................................................................ 34

PUBLIC POLICY GUIDE 2018 / STATE LEGISLATIVE PRIORITIES / 1

TABLE OF CONTENTS

| Federal Agency Privacy & Data Security Act (FAPA) | 51 |
| Federal Government Investment | 52 |
| International | 53 |
| U.S. - China ICT Trade Policy | 55 |
| Modernizing the North American Free Trade Agreement (NAFTA) | 56 |
| Rural Broadband and IoT | 43 |
| Federal Tax Policy | 41 |
| Bitcoin and Other Digital Currencies | 46 |
| Mobile Workforce | 47 |
| Corporate Tax Reform | 48 |
| Privacy | 49 |
| Workforce Development | 25 |
| Technological Advancement | 26 |
| Intellectual Property | 27 |
| Workforce Development | 28 |
| Employment and Workforce Development | 29 |
| Federal Tax Policy | 30 |
| International | 31 |
| U.S. - China ICT Trade Policy | 32 |
| Modernizing the North American Free Trade Agreement (NAFTA) | 33 |

Support Skills for the 21st Century Workforce
STEM Education
Workforce Development
Immigration Reform
Workplace
Biosciences and Health Care
Medical Device Tax Repeal
New and Emerging Tech
Support New and Emerging Technology Platforms through Thoughtful Policies
Artificial Intelligence
Federal Government Investment
In Research and Development

Lead in Secure Internet-Based Platform Technologies
Internet of Things (IoT)
Smart Cities and Connected Communities
Broadband and Telecom
Address Availability and Delivery of Broadband Communications
Encourage Broadband Deployment and Improve Broadband Access
Financial Technology
Free Up Spectrum for Innovation
Rural Broadband and IoT

PUBLIC POLICY GUIDE 2018 / STATE LEGISLATIVE PRIORITIES / 1
AEROSPACE, AVIATION & DEFENSE

PRINCIPLE

Arizona is a vital contributor to U.S. national security interests by having fostered a pioneering spirit in aerospace, aviation and defense for generations. With 1,250 companies in aerospace and defense—including major prime contractors such as Raytheon, Honeywell, Boeing, Lockheed Martin, General Dynamics, Orbital ATK and Northrop Grumman—Arizona boasts thousands of highly-skilled technology workers with high-paying jobs. Additionally, the state’s military bases contribute approximately $11.46 billion annually to the Arizona economy.

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

POSITIONS

DEFENSE SPENDING

Sustain and grow total billing in defense contracting. Arizona is an exceptional teaming partner with the U.S. Department of Homeland Security. Conduct focused capabilities and role of Fort Huachuca, which includes cyber defense, networks, unmanned aerial systems (UAS) training, intelligence and communications equipment without extraneous electronic interference in Southern Arizona.

ARIZONA’S MILITARY BASES

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

MILITARY BASE MISSIONS

Protect and improve the missions of the future-focused capabilities and role of Fort Huachuca, which includes 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. Finally, protect and expand the network and cyber defense mission of U.S. Army NETCOM at Fort Huachuca.

UNMANNED AERIAL SYSTEMS

Expand the capabilities of the largest UAS training center in the world at Fort Huachuca. 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.

Continue to support a single federal standard for integrating UAS into the national airspace while balancing privacy concerns. The current absence of state restrictions in Arizona on the use of UAS is a competitive advantage. Actively promote Arizona’s commercial, unmanned systems sector as a pillar of future economic growth through research and development, prototyping and product development by leveraging key state assets and touring the state as an innovation leader in this fast-emerging industry sector.

Commercial Space Technology

With the global commercial space market at over $360 billion annually and recent new commercial space developments 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.

Ensure the career and technical education (CTE) program provides adequate workforce placement and retention through coordination with industry. Support workforce placement and retention through coordination with industry. Ensure the career and technical education (CTE) program provides adequate workforce placement and retention through coordination with industry.

Workforce Development and Retention

– Promote partnerships in K-12 education, post-secondary education, and professional development for advanced manufacturing and high-tech industries.

– 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/academic teaming for Small Business Technology Transfer (STTR) and collaboration for SBIRs to retain academic talent and graduates in Arizona.

Business Technology Transfer (STTR)

– Support workforce placement and retention through coordination with industry. Ensure the career and technical education (CTE) program provides adequate workforce placement and retention through coordination with industry.
**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. Arizona voters in 2000 approved Proposition 301, which resulted in the investment of hundreds of millions of dollars in research and scientific talent, as well as essential funding for K-20 education. The result was a tremendous improvement in the state’s competitive ability to attract and retain valuable private and public investment, commerce, and jobs. Renewed investment will continue to accelerate Arizona’s economic base in the growing bioscience fields. With Proposition 301 funding ending in 2020, a new solution is needed to continue these mission critical funding programs for education and for the academic research that supports the growth of our high-technology and biotechnology industries. To continue Arizona’s position as an innovation leader in the biosciences and other high-tech fields, the Technology Research Innovation Fund (TRIF) must be reauthorized and funding should be in the same proportion as K-12 funding that exists under Proposition 301.

**Internships**
– Develop innovative funding sources to support STEM internships to further enrich Arizona’s educational environment, and attract and retain a highly-talented bioscience workforce.

**Access to the Benefits of Life Science Innovation**
– Lower overall health care costs for individuals and the state because medical technologies can improve the quality of life for Arizonans when used appropriately. Efforts should be made to:
  • Ensure Arizonans have the opportunity to benefit from the lifesaving and life-changing innovations the biotechnology and medical technology industries can offer.
  • Continue the expansion of telemedicine services and reimbursement across the state, thus supporting both quality care and cost-effective health care delivery.
  • Ensure funding previously managed by the Arizona Biomedical Research Commission continues to be applied to bioscience research, education and innovation specifically designed to benefit the people of Arizona.

**BIOSCIENCES AND HEALTH CARE: TELEHEALTH**

**PRINCIPLE**
Telehealth and its integration into delivery of health care through electronic means should continue to be enabled throughout Arizona. That includes educating and advocating for uniform deployment and enforcement of the new telemedicine laws at state and local levels, and facilitating expansion of a robust statewide telehealth ecosystem.

**POSITIONS**

**Telemedicine Bill Refinements**
– 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. Patients and health care providers are benefiting from initial policy and rule implementations. However, still lacking is uniform understanding of the new telemedicine parity and licensure laws that expanded service coverage and removed statutory and regulatory barriers. This lack of awareness, understanding and enforcement of the new telemedicine laws has resulted in a lag in provider participation, which negates providers’ 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.
The quickest and most efficient way to make 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 for them. Arizona needs to address this issue because it is losing out on some of this country’s most coveted jobs.

**POSITIONS**

- **Angel Investment Recapitalization** – Ensure additional credits recently authorized for the Angel Investment Tax Credit program stay in place for the life of the program. The Legislature in 2014 extended the highly successful tax credit program until 2021. However, the amount of angel investing in the state decreased significantly after the initial $20 million in authorized funds were depleted in summer 2015. In their 2017 session, lawmakers authorized the Arizona Commerce Authority to certify an additional $2.5 million of tax credits each fiscal year until 2021 for investments made in a qualified small business plus any unused credit capacity that carries over from the preceding year.

- **Research & Development Tax Credit** – Maintain levels of the extremely successful Research & Development (R&D) Tax Credit program to 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 percent to 24 percent for the first $2.5 million in qualifying expenses and increasing the rate for qualifying expenses in excess of $2.5 million from 11 percent to 15 percent. In the 2017 session, legislators approved maintaining current percentage levels until 2031. An analysis should be done to determine ways that companies can utilize some of their unused credits.

- **Refundable R&D Tax Credit** – Expand the Refundable R&D Tax Credit program to meet the needs of the early-stage companies that are investing research and development dollars and earning credits without having the tax liability to which they can apply them. Ensure more accessibility for small businesses, maximizing the impact of the overall program. The program is capped at $5 million per year. Historically, this money has been allocated quickly, showing a much higher demand than the existing funding levels.

- **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. In the 2017 legislative session, the Arizona Competes Fund was modified to include grants that support and advance programs for “microenterprises.” Specifically, 30 percent or up to $5 million of the annual grants in each fiscal year must be used for microenterprise development in Arizona. The statutory termination date of the fund was also extended until July 2026. The modifications are intended 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 (e.g., Utah’s fund of funds model and Maryland’s insurance premium tax credits) used in other states need to be analyzed to determine which could be potentially viable methods in Arizona.

- **Coordination of Angel Investment Activity** – Support the efforts of the Arizona Commerce Authority (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 clearinghouse” for startups 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.
PRINCIPLE

Supervision – Support federal and state agencies in order to equip the current workforce and develop the next generation of protection and response professionals.

Regulations – Promote reasonable regulations that center on consistent and comprehensive privacy notice and breach response requirements by working to keep public agencies educated and aware of the best cybersecurity practices.

ECONOMIC DEVELOPMENT

ECONOMIC DEVELOPMENT

PRINCIPLE

Arizona must be able to compete with any state or country by having the most competitive economic development tools possible while encouraging innovation, business attraction, retention and growth.

POSITIONS

AIA State Promotional Effort – Advocate for Arizona Commerce Authority’s (ACA) continuation at an appropriate level of funding and work to ensure it remains as the platform for the state’s economic development efforts. Encourage support for the many ongoing ACA initiatives that are focused on enhancing the Arizona innovation ecosystem. The ACA’s mission is to grow and strengthen Arizona’s economy, and facilitate the production of quality jobs for its citizens by creating, expanding and attracting businesses in targeted, high-value base industries throughout the state. In 2016, Gov. Doug Ducey and the Legislature further expanded upon this mission and created the Governor’s Economic Opportunity Office.

Global Competitiveness – Support the increase of resources dedicated to Arizona Commerce Authority’s (ACA) Trade and Export Promotion (STEP) program of 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 the many ongoing ACA initiatives that are focused on enhancing the Arizona innovation ecosystem. The ACA’s mission is to grow and strengthen Arizona’s economy, and facilitate the production of quality jobs for its citizens by creating, expanding and attracting businesses in targeted, high-value base industries throughout the state. In 2016, Gov. Doug Ducey and the Legislature further expanded upon this mission and created the Governor’s Economic Opportunity Office.

Target Industries – Spend substantial public policy efforts and accompanying resources on 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-wage employers that pay the highest wages. Wage studies routinely show that the many technology fields supported by the Council employ the highest-wage employers that pay the highest wages. Wage studies routinely show that the many technology fields supported by the Council employ the highest-wage employers that pay the highest wages. Wage studies routinely show that the many technology fields supported by the Council employ the highest-wage employers that pay the highest wages.

Encourage support for the many ongoing ACA initiatives that are focused on enhancing the Arizona innovation ecosystem. The ACA’s mission is to grow and strengthen Arizona’s economy, and facilitate the production of quality jobs for its citizens by creating, expanding and attracting businesses in targeted, high-value base industries throughout the state. In 2016, Gov. Doug Ducey and the Legislature further expanded upon this mission and created the Governor’s Economic Opportunity Office.

Infrastructure Investment – Support development of tools to facilitate public and private investment in infrastructure necessary to competitively encourage high-technology manufacturing investments and growth.
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. Aligned education and workforce development system must be developed and supported. Such a system would provide the foundation of a healthy Arizona technology community and innovation economy by:

- Aligning with the needs of companies for science, technology, engineering and math (STEM) workers now and in the future.
- Enabling the attraction and retention of the talent—in state or import—needed for Arizona to thrive as a technology hub.

POSITIONS

College and Career Readiness - Increase the college and career readiness of Arizona’s youth, and support the state’s education and economic development by championing support for improvements in pre-kindergarten through high school education and alignment with business needs. Leverage influence, market relevance, and high expectations for all students as key strategies for improvement. Major areas of focus should include career awareness and development beginning no later than 8th grade, understanding and increasing work-based and work-like experiences provided through high school and postsecondary education.

Education Funding - Appropriately fund the state’s education system at all levels. Short-term reforms should include high expectations for all students and equitable funding of K-12 education that supports excellence, such as the Proposition 301 formula. Alternative ideas should also be developed to appropriately fund pre- and full-day kindergarten, CTE, community colleges and universities in addition to K-12. Long-term comprehensive reform efforts should modernize and promote a 21st century delivery model of education that includes developing sustainable funding models. These are strategic investments to maximize high school and postsecondary education attainment, and ensure preparation of the workforce needed by Arizona’s growth industries.

Credit for Experience – Support legislation to allow high school credit for work-based and work-like experiences. Leverage incentives, tax credits and apprenticeship grants to promote internships and apprenticeship programs.

Career Readiness - Improve awareness of careers and pathways to increase relevance and accelerate career readiness. Support and provide funding for the beginning of career and career pathways exploration in 7th and 8th grades. While CTE has always been an integral part of high school curriculum, broad career awareness has not. While CTE has always been an integral part of high school curriculum, broad career awareness has not.

Talent Gap - Promote active company participation in bridging the talent gap. Engage business, education, workforce and economic development communities in collaborative, informed sector, and cross-industry strategies and implementation. Leverage programs and agencies charged with addressing skilled workforce shortages in high-tech industry sectors, including energy, information technology, bioscience, health sciences, and mid-size and advanced manufacturing.

STEM - Raise awareness about critical teacher recruitment and retention issues, especially in STEM. Professional development and training for educators across all STEM subjects and career areas to attract and keep qualified teachers in robust STEM classes, including computer science, as part of dramatically improving STEM education for every student in the state. This is not the whole picture, but it is as defined as the state’s commitment to provide a quality education for all students in which the STEM is integral for the technology and innovation economy that Arizona wants.

Teaching Computer Science/High School Computer Science Mandate – Advocate for increased utilization of the national K-12 Computer Science Framework and support Gov. Doug Ducey’s participation in the Governors’ Partnership for K-12 Computer Science. Work toward enabling all high schools to be able to offer at least one computer science course, funding rigorous preprofessional development and creating high-quality computer science standards. This would support a recommendation to require all secondary schools to offer rigorous standards-based computer science in person or remotely. Capture public-private matching fund opportunities to bring computer science to school districts, demonstrate the importance of computer science to Arizona’s economy and motivate and expand the interest of teachers to pursue the field.

Internet Access – Disable broadband for rural K-12 schools and libraries. The Arizona Governor’s Office of Education and the Arizona Department of Education (ADE) and Arizona’s Internet for Arizona’s School Kids program. Together with community partners to begin closing the Internet access gap for rural Arizona K-12 schools and libraries through partnership and shared effort. A recent FCC special program alleen diversifies and builds out new broadband infrastructure such as fiber to rural K-12 schools and libraries through July 2018 and potentially longer. The Arizona Corporation Commission (ACC) has modified the Arizona Universal Service Fund (AUSF) to make $58 million available for matching purposes with augmentation by $38 million approved in last year’s state budget. The FCC will pay up to 80 percent of qualified broadband infrastructure costs. However, with the state providing an additional 10 percent of the costs and the FCC providing the last 10 percent, many projects would be fully funded under the program. In the short term, the recommendations should include: the Arizona Department of Education, Arizona's Department of Library, Archives and Public Records operate aggressively pursuing the generation of requests for proposals for qualifying projects under the FCC special program that helps form and assist coalitions.
EDUCATION, WORKFORCE AND WORKPLACE

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. Additionally, Arizona needs to secure an 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—requires energy markets that are affordable, reliable and competitive. 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 as described below. There have been several recent efforts to establish and improve the clarity of Arizona’s energy policy. The Arizona Energy Roadmap, which was developed through input from a series of industry stakeholder meetings, represents a new and important step in the development of an energy policy in the future.

POSITIONS

- **Natural Gas** – Continues to take advantage of Arizona’s natural gas generation resources to provide an attractive in-state, export-ready electricity supply. Intermittent renewable resources augmented by natural gas generation can provide a carbon-reduced, secure power source until other utility-scale renewable options with inherent or built-in storage become available. Adding modern, flexible natural gas generation to existing fleets will be important to maintaining this synergy.
- **Nuclear Energy** – Continues Arizona’s utilization of the low-cost base load power of the Palo Verde Nuclear Generating Station to benefit both efforts was to provide more certainty to developing Arizona's energy policy in the future.
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 supplies. 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.

• Solar Energy – Seek ways to attract economic solar investment that takes advantage of the state’s world-class solar energy attributes. Arizona exhibits some of the best attributes for harnessing solar energy in the world. The state’s ideal location, moderate climate, and proximity to substantial and in-place infrastructure provide real world inputs for Arizona to establish itself as the leader of solar energy generation and innovation.

Electric Transmission – Continue to support transmission development that enhances Arizona’s ability to participate in energy markets 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. Although in-state demand decreased during and after the recession, load growth has been recovering since 2014. New generation, however, will be needed as soon as 2018. With large, high-demand markets in the broader region, Arizona has a tremendous opportunity to prosper through the steady, predictable power needs of always-on manufacturing, data hosting and bioscientific experimentation.

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 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 our water challenges. This may include a focus on securing early-stage risk capital for these businesses. It also may involve collaborating with economic development entities at local and state levels to attract more businesses. Support collaboration between universities and the private sector to develop new technologies to conserve water and augment supplies.

Storage Technology – Look for opportunities to explore storage technology that is rapidly developing and holds promise to be a significant 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 ease such challenges.

FINANCIAL TECHNOLOGY

PRINCIPLE

Arizona’s financial technology (FinTech) sector is among the most promising and fastest growing in our technology community. To proliferate the use of emerging technologies in our financial system, the Council proposes an update to the state regulatory framework and model legislation for Arizona’s use of virtual currency and other blockchain applications. There’s a broad FinTech community with a diverse range of stakeholders and services that have the potential of disrupting the traditional financial services industry which are interested in incoming regulatory barriers that have the potential to inhibit FinTech innovation and emerging business models. We will help drive state regulatory reform to allow use of virtual currency that meets the needs of Arizona’s FinTech sector where innovations primarily rely on virtual currency, a digital representation of value used as a medium of exchange, a unit of account or a store of value without legal tender status as recognised by the U.S. government. Companies involved in virtual currency activities are multi-jurisdictional by nature. Any artificial barriers to their ability to operate without regard to geographical boundary within the U.S. adversely impacts the significant cost-effectiveness and efficiencies that their business models offer to other businesses and consumers.

Although virtual currency can offer transactions that are more convenient, faster and much less costly, state licensure and regulation aimed at traditional banking and financial services are often overly onerous and inhibit innovation and emerging business models. Several other states have chosen to update their framework for digital currency as a way to encourage and embrace an emerging financial sector, encouraging the growth of dynamic regional FinTech ecosystems. Arizona must provide a robust, streamlined supervisory experience for virtual currency and other blockchain applications and services that are focused on providing businesses that don’t favor larger players over small ones, and appropriately protects consumers from harm. The following recommended paths target several areas in need of reform:

POSITIONS

Digital Signatures and Smart Contracts – Traditional paper contracts can be quite unwieldy and prone to fraud, which is why digital ‘smart contracts’ tied to immutable blockchains are emerging as an alternative. Last session, Arizona passed HB2417 that amended the Arizona Electronic Transactions Act to include a term definition for blockchain, analyzing the validity and enforceability for records or contracts. This regulatory clarity has helped Arizona emerge as a choice location for blockchain companies that develop
applications based on smart contracts and should be updated as necessary going forward.

Fintech Regulatory Sandbox – FinTech startups are particularly disadvantaged by the difficulties and costs of complying with conventional money transmission licensing regimens. Legislation should be passed enabling innovative initiatives to germinate through the 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. The Council will support efforts of the Arizona Attorney General’s Office and other stakeholders in crafting and passing such legislation.

Money Transmission Licensing (MTL) Regulation – Arizona should also adopt regulation or legislation for MTL that explains only virtual currency businesses also dealing in traditional currencies are money transmitters and clarify that businesses dealing strictly in virtual currency are not money transmitters. Alternately, Arizona should pass new legislation that creates a more appropriate and less burdensome sui generis licensing regime separate from MTL laws for virtual currency businesses that have control strictly over virtual currency on behalf of their customers.

Regulatory Reciprocity Between States – Arizona should work with other states and national organizations in establishing common multistate MTL and virtual money regulations and licensure, consistent with the principles stated above, that would ensure legal and regulatory reciprocity between participating jurisdictions.

FINANCIAL TECHNOLOGY CONTINUED

PRINCIPLE
The Arizona optics, photonics and astronomy industry contributes an annual economic impact of more than $3 billion to the state’s economy. Arizona holds a worldwide leadership reputation for both the optics industry and astronomy, as well as the academic prowess for related research and development. Together, they attract and retain world-class technical talent in the state. Leading products and technologies enable many applications that drive Arizona’s robust optics companies.

Vital issues impacting optics range from protecting Arizona’s celebrated dark skies, assuring world-class optics workforce readiness, and promoting commerce-friendly export control reform that promotes global export revenue growth. Representation of the Arizona optics community is being accomplished by Optics Valley, a committee within the Council. Optics Valley’s mission is to catalyze, convene and connect a more robust optics industry sector. The policy positions below are intended to support the goal of attracting future investments in optics, photonics and astronomy, and growing a quality workforce.

POSITIONS

Dark-Sky – Establish statewide Dark-Sky standards or solutions that protect the $1.5 billion in capital investment in astronomical infrastructure and more than $250 million in annual economic impact of research and development at astronomy facilities statewide. Advocate for and encourage Dark-Sky sensitive and appropriate use of LED technology for outdoor lighting as its use becomes increasingly widespread.

University Research and Development – Strengthen opportunities to grow the impact of world-class research and development at Arizona’s universities.

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 among 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, and health and medicine. AIM Photonics is an industry-driven, public-private partnership that focuses the nation’s premier capabilities and expertise to capture critical global manufacturing leadership in a technology that is both essential to national security and positioned to provide a compelling return-on-investment to the U.S. economy.

Export Reform – Ensure that export reform policies support and encourage optics companies to engage in global commercial markets.
PRINCIPLE
In 2017, Arizona once again had a structurally balanced budget but has about a $100 million deficit moving into the 2018 legislative session. However, it is the Governor's and Legislature's priority to maintain a structurally balanced budget, reduce rollovers and debt, and maintain a rainy-day fund. Being a business-friendly state has been one of Gov. Doug Ducey's top priorities since day one of his administration.

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 avoid debt financing for operating expenses or use of fiscally unsustainable accounting gimmicks. 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 for the remainder of the program.

Support ACA Programs & Funding – Discourage the Legislature from sweeping any funds not used in a particular fiscal year by the Arizona Commerce Authority (ACA). 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 that help it achieve its mission.

Education Funding – Appropriately fund the state’s education system at all levels, including pre-kindergarten, full-day kindergarten, K-12 and postsecondary. Short-term reforms should include funding K-12 education according to the Proposition 320 formula, as well as alternative ideas to appropriately fund pre- and full-day kindergarten, K-12, CTC’s, 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 require 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.

STATE BUDGET

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, creation, 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 in 2015 still faced property tax assessment ratios 80 percent greater than those of residential property owners.

Capital Gains – Increase the current capital gain deduction from 25 percent to 57 percent 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.

TAXATION
TRANSPORTATION/DIGITAL INFRASTRUCTURE

PRINCIPLE

Arizona citizens benefit from improving safety, reducing travel time and enhancing commercial enterprises through efficient transportation networks 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 where appropriate. Digital infrastructure is to the 21st century what roads and interstates were to the 20th century. Arizona’s transportation infrastructure needs to include roadways and telecommunications pathways coupled with rail, telecommunications, and energy rights of way and facilities. Further, I-11 should be extended south of Phoenix to create an important international freight corridor between Mexico and the Intermountain West. I-11 would facilitate the movement of goods to and from Mexico and the Intermountain West.

Positions

Continued Encouragement of Locating Data Centers in Arizona

Support Expansion and Retention of the Data Center Industry by Promoting New Incomes and Services that Expand Technology Opportunities in Arizona

Broadband Support – Remove or reduce barriers that generate unnecessary costs or delays and otherwise inhibit expansion of privately-funded, high-speed digital infrastructure that meets the needs of all Arizonans. Proactively coordinate with government at all levels to ensure rights of way are readily and affordably available and support fair and prompt government reimbursement and approval of projects to encourage private broadband investment and deployment. Continue existing regulatory burdens and simplifying processes for deployment of wireless sites and vertical infrastructure, including microwaves, transceivers and distributed access systems (DAS). In light of the ever-increasing importance and role of mobile connectivity, as well as the infrastructure demands of emerging 5G services. Support the Federal’ initiatives for public safety broadband andおく cheerful, reliable communications while ensuring the public’s critical infrastructure improvements available to other purposes and applications.

Continued to launch strategic planning efforts for state broadband that are engaging providers, communities, industries, and other stakeholders to continue to support the expansion of broadband access 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. Support regional and local government policies that ensure a level playing field for incumbent and new entrant broadband providers alike, including, but not limited to, access to the use of right-of-way, infrastructure underwriting requirements, mobile infrastructure expansion, and expedited/best-first building permit issuance.

Modern Surface Transportation System – Support modernization of the state’s transportation infrastructure to improve mobility, ensure freight truckers a secure, modern interstate network. 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. Encourage multimodal vetting with rail, telecommunications, and energy rights of way and facilities. Further, I-11 should be extended south of Phoenix to create an important international freight corridor between Mexico and the Intermountain West.

Transit – Support transit-related systems and development that add to the quality of life for Arizona residents and visitors, and provide enhanced workforce mobility.

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 that can help make Arizona’s roads safer, increase mobility and make the state a test bed for many emerging technologies.

Transportation Funding Formula – Support reforming the formula to more adequately fund transportation needs across the state. The current formula is nearly 25 years old and today provides a fraction of the funding level originally intended. Rural communities and the highways that connect Arizona to the world outside of the urban areas have been particularly hit hard by the lack of a modern funding formula.

Arizona Ports of Entry – Focus on encouraging both infrastructure investments and process improvement for Arizona’s ports of entry along our southern border to better enable international trade and commerce and to improve the flow of goods to market. Support the President’s request for additional personnel, particularly in key border cities, the ports of entry are bottlenecks for smooth and timely logistics of cross-border transportation of goods. To help, the state should: provide:

• Targeted Funding – Identify funding streams that 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.

• Additional Staffing – Fulfill the need for additional staffing desperately needed at our ports of entry. For Arizona, that means a full-time equivalent of nearly 250 funded positions. U.S. Sens. Jeff Flake and John McCain joined Rep. Martha McSally, as well as the other members of the Arizona delegation, to work on the passage of the Border Jobs for Veterans Act to create a mechanism for military to transition into these enforcement jobs. 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. Many have been starved of capital 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.

• Recognition as Assets – Recognize the U.S. border and ports of entry as valuable assets essential to the national and North American economies rather than additional expenses in the federal budget. With current North American Free Trade Agreement trade volumes of more than $1.2 trillion annually, we fail to maximize the opportunity for investment, job creation, economic security.

• Process Improvements – Improve processing of cargo — including more collaborative cargo and truck inspection processes by federal, state and Mexican authorities — to reduce the need for physical infrastructure and queues crossing times.

This upcoming session, efforts will focus on working with executive and legislative leadership 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.

process public policy guide 2016 / STATE LEGISLATIVE PRIORITIES / PUBLIC POLICY GUIDE 2018
21
The 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 trained 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, equipment.

**Enterprise Model** – Support an enterprise model of operations, which recognizes and advances each university and its differentiated mission.

- Allow the university system to undergo a strategically placed withdrawal of fees from the state health benefits plan at the expiration of the current contract (expected Dec. 31, 2019) and secure a systemwide health benefits plan or individual university plans.

**Sun Corridor Network** – Encourage policies that enable the Sun Corridor Network, the Arizona universities’ research and education collaborative network, to flourish. 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-12 education technology infrastructure is essential to enable modern digital learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.

Actively support the Sun Corridor 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. Successful rollout of this strategy will enable the Sun Corridor Network and its member universities—ASU, The University of Arizona and Northern Arizona University—to bring better and low-cost Internet and Internet2 access to K-12 schools, community colleges and other educational institutions by leveraging economies of scale and shared infrastructure.

**PUBLIC POLICY GUIDE 2018**

**STATE LEGISLATIVE PRIORITIES**

**UNIVERSITIES AND HIGHER EDUCATION**

**PRINCIPLE**

The 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 trained 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, equipment.

**Enterprise Model** – Support an enterprise model of operations, which recognizes and advances each university and its differentiated mission.

- Allow the university system to undergo a strategically placed withdrawal of fees from the state health benefits plan at the expiration of the current contract (expected Dec. 31, 2019) and secure a systemwide health benefits plan or individual university plans.

**Sun Corridor Network** – Encourage policies that enable the Sun Corridor Network, the Arizona universities’ research and education collaborative network, to flourish. 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-12 education technology infrastructure is essential to enable modern digital learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.

Actively support the Sun Corridor 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. Successful rollout of this strategy will enable the Sun Corridor Network and its member universities—ASU, The University of Arizona and Northern Arizona University—to bring better and low-cost Internet and Internet2 access to K-12 schools, community colleges and other educational institutions by leveraging economies of scale and shared infrastructure.

**PUBLIC POLICY GUIDE 2018**

**STATE LEGISLATIVE PRIORITIES**

**ARIZONA TECHNOLOGY COUNCIL**

**STATE LEGISLATIVE PRIORITIES – 2018**

**UNIVERSITIES AND HIGHER EDUCATION**

**PRINCIPLE**

The 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 trained 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, equipment.

**Enterprise Model** – Support an enterprise model of operations, which recognizes and advances each university and its differentiated mission.

- Allow the university system to undergo a strategically placed withdrawal of fees from the state health benefits plan at the expiration of the current contract (expected Dec. 31, 2019) and secure a systemwide health benefits plan or individual university plans.

**Sun Corridor Network** – Encourage policies that enable the Sun Corridor Network, the Arizona universities’ research and education collaborative network, to flourish. 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-12 education technology infrastructure is essential to enable modern digital learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.

Actively support the Sun Corridor 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. Successful rollout of this strategy will enable the Sun Corridor Network and its member universities—ASU, The University of Arizona and Northern Arizona University—to bring better and low-cost Internet and Internet2 access to K-12 schools, community colleges and other educational institutions by leveraging economies of scale and shared infrastructure.

**PUBLIC POLICY GUIDE 2018**

**STATE LEGISLATIVE PRIORITIES**

**UNIVERSITIES AND HIGHER EDUCATION**

**PRINCIPLE**

The 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 trained 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, equipment.

**Enterprise Model** – Support an enterprise model of operations, which recognizes and advances each university and its differentiated mission.

- Allow the university system to undergo a strategically placed withdrawal of fees from the state health benefits plan at the expiration of the current contract (expected Dec. 31, 2019) and secure a systemwide health benefits plan or individual university plans.

**Sun Corridor Network** – Encourage policies that enable the Sun Corridor Network, the Arizona universities’ research and education collaborative network, to flourish. 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-12 education technology infrastructure is essential to enable modern digital learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.

Actively support the Sun Corridor 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. Successful rollout of this strategy will enable the Sun Corridor Network and its member universities—ASU, The University of Arizona and Northern Arizona University—to bring better and low-cost Internet and Internet2 access to K-12 schools, community colleges and other educational institutions by leveraging economies of scale and shared infrastructure.

**PUBLIC POLICY GUIDE 2018**

**STATE LEGISLATIVE PRIORITIES**

**UNIVERSITIES AND HIGHER EDUCATION**

**PRINCIPLE**

The 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 trained 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, equipment.

**Enterprise Model** – Support an enterprise model of operations, which recognizes and advances each university and its differentiated mission.

- Allow the university system to undergo a strategically placed withdrawal of fees from the state health benefits plan at the expiration of the current contract (expected Dec. 31, 2019) and secure a systemwide health benefits plan or individual university plans.

**Sun Corridor Network** – Encourage policies that enable the Sun Corridor Network, the Arizona universities’ research and education collaborative network, to flourish. 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-12 education technology infrastructure is essential to enable modern digital learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.

Actively support the Sun Corridor 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. Successful rollout of this strategy will enable the Sun Corridor Network and its member universities—ASU, The University of Arizona and Northern Arizona University—to bring better and low-cost Internet and Internet2 access to K-12 schools, community colleges and other educational institutions by leveraging economies of scale and shared infrastructure.
**PRINCIPLE**
The Arizona Technology Council is uniquely positioned at the intersection of innovation, education and economic growth. We support policies that expand lifelong education in the computer sciences and basic technology skills, and promote a skilled workforce that spurs job growth and our ability to compete globally.

**POSITIONS**
- Support the workforce by enacting the Championing Apprenticeships for New Careers and Employees in Technology Act, as well as the Carl D. Perkins Career and Technical Education Act.
- Advocate for policies that emphasize early academic support for science, technology, engineering and math (STEM) instruction, and carry these efforts through higher education institutions to prepare students and workers for lifelong learning opportunities.
- Support the reasonable use and responsible stewardship of student data by schools, districts and service providers, such as analyzing the data to deliver personalized learning experiences and improve products for use.
- Support and develop initiatives that encourage minorities, veterans and underrepresented communities to pursue science and technology career paths.
- Recognize the ability to recruit and retain the strongest workforce means supporting an inclusive workforce that welcomes people of all thoughts, races, ethnicities, sexual orientations and gender identities.
- Ensure the government workforce has necessary IT security skills by:
  - Supporting the National Initiative for Cybersecurity Education.
  - Seeking adequate awareness support and funding for government IT workforce recruitment, training, certification and retention.
- Support immigration reform by:
  - Increasing the number of permanent resident, or green, cards for high-skilled STEM graduates.
  - Creating new visas for U.S.-educated students and entrepreneurs to lessen the demand on the H-1B category.
- Adopting market-based visa caps.
- Growing domestic sources of talent through support of STEM at all levels of education.

**21ST CENTURY WORKFORCE SUPPORT SKILLS FOR THE 21ST CENTURY WORKFORCE**

**PRINCIPLE**
STEM education is more important than ever as the technology industry continues to grow. Currently, more jobs in the technology sector exist than talent to fill those jobs.

**POSITIONS**
The Arizona Technology Council supports efforts to make STEM a fundamental component in elementary, secondary and postsecondary education. Making STEM a fundamental component in education will enable students to better understand our 21st century economy, and enhance our domestic talent pipeline. We believe educators should emphasize the “T” – technology – in STEM and provide increased experential learning surrounding the subject. The Council also supports efforts to increase the racial, gender and socioeconomic diversity of our STEM talent pipeline.

**Key Points:**
- Policymakers must emphasize STEM education for the nation to remain globally competitive.
- Nearly half of all STEM jobs do not require a four-year college degree.
- STEM jobs are high-paying and in demand.
- Middle-skill jobs that require technology grew 2½ times faster between 2003 and 2013 than other middle-skill jobs.
- More than 600,000 tech occupations went unfilled in just Q4 2016.
- Over the next decade, more than half of all manufacturing jobs will go unfilled because workers lack the skills needed to fill the positions.

**STEM EDUCATION**

**PRINCIPLE**
STEM education is more important than ever as the technology industry continues to grow. Currently, more jobs in the technology sector exist than talent to fill those jobs.

**POSITIONS**
The Arizona Technology Council supports efforts to make STEM a fundamental component in elementary, secondary and postsecondary education. Making STEM a fundamental component in education will enable students to better understand our 21st century economy, and enhance our domestic talent pipeline. We believe educators should emphasize the “T” – technology – in STEM and provide increased experiential learning surrounding the subject. The Council also supports efforts to increase the racial, gender and socioeconomic diversity of our STEM talent pipeline.
WORKFORCE DEVELOPMENT

PRINCIPLE

Although technology jobs are plentiful, employers often struggle to fill vacancies because of a dearth of qualified talent.

POSITIONS

The Arizona Technology Council supports state and federal policies to upskill U.S. workers. In helping workers acquire the skills today’s economy demands, workforce programs can help shrink the skills gap, open career pathways and ensure our nation remains the global economic engine. Examples of programs include:

- **Job Training and Placement Programs** – Programs like IT-Ready from Creating IT Futures can help the un- and underemployed pursue their first IT careers.

- **Work-Based Learning** – Hands-on, experiential learning enables students to contextualize their classroom learning. Earn-and-learn programs like apprenticeships allow students to continue their education while simultaneously earning an income.

- **Career and Technical Education (CTE) and Certification Programs** – Community colleges and other postsecondary institutions, along with industry-recognized certification programs provide career pathways for many non-traditional students. Portable, industry-recognized certifications are especially critical in today’s workforce. The Carl D. Perkins Career and Technical Education Act is an example.

Key Points:

- Technology jobs are high-paying and in demand.
- Over the next decade, more than half of all manufacturing jobs will go unfilled because workers lack the skills needed to fill the positions.
- Nearly half of all STEM jobs do not require a four-year college degree.
- Four-year college pathways are just one avenue to shrinking the skills gap. Technology education programs should be competency-based, not time-based.

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 would help fill the thousands of technology-related job openings, furthering opportunities for starting and growing new businesses in the United States.

- **Market-Based Visa Caps** – Using market-based caps on H-1B 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 our member companies are strongly committed to improving education in STEM and encouraging more young Americans to choose careers in these 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 our ability to compete globally. Quality education and worker training — and retraining — will help ensure the availability of a skilled and competitive workforce.

Advancing a Diverse Technology Workforce - The safety and prosperity of the United States rests not only on sensible border security measures but also in equal measure on the integration of diverse peoples that bring cultural, educational, scientific, and religious perspectives and knowledge that strengthen the fabric of our society. We feel this most profoundly in the technology industry, where so many iconic American companies and major employers were all founded, at least in part by foreign nationals. The Council supports the Deferred Action for Childhood Arrivals (DACA) program, and policies that keep our borders and our businesses open to the best and brightest.
Key Points:
• Whether U.S. or foreign-born, the brightest scientists, researchers, innovators and engineers in the world will always be in demand and drive economic growth and job creation. U.S. employers, be they small businesses or large multinationals, must be able to recruit and retain highly-educated foreign-born professionals – particularly after they graduate from a U.S. university – as an important complement to domestic sources of talent. The reality is that at least 50 percent of U.S. universities’ master’s and doctoral graduates in STEM fields are foreign nationals.
• Future growth and job creation will be led by innovation, whether it’s new technologies, new cures or new sources of energy. For every foreign-born STEM worker who stays in the United States and works, an additional three jobs are created. Our nation does not have a monopoly on brainpower, and in an increasingly competitive global environment, we have to retain the talent who will keep us leading worldwide innovation.
• The United States benefits from the contributions of highly educated, entrepreneurial professionals, regardless of where they were born. More than 40 percent of Fortune 500 companies were founded in part by immigrants or children of immigrants. Iconic U.S. companies – and major employers – such as Intel, Sun Microsystems, eBay, Yahoo! and Google were all founded, at least in part, by foreign nationals.
• Some states are imposing income taxes on non-residents after very brief work-related stays. This makes tax compliance more complicated for individuals and their employers. It also deters business-related travel.

IMMIGRATION REFORM CONTINUED

Equality for All Workers – Employees should be judged on their merits as opposed to their identities, fostering an environment where innovation can thrive. Embracing basic principles of non-discrimination is critical for attracting and retaining a competitive workforce.

Housing and Public Accommodation Non-Discrimination – Public policy decision makers should be advocated to pass legal protections for LGBTQ people in housing and public accommodations. Employees who can operate freely in the marketplace without the stresses of biased treatment are better able to focus on productivity and performance at work.

WORKPLACE

PRINCIPLE
The Arizona Technology Council is committed to fairness, equality and non-discrimination in the workplace for all individuals.

POSITIONS
Employment Non-Discrimination – Public policy decision makers should be advocated to pass the federal Equality Act and statewide protections in Arizona. The Employment Non-Discrimination Act (ENDA) passed by the U.S. Senate in 2013 with the support of both senators representing Arizona. ENDA would end employment discrimination based on sexual orientation and gender identity.

Housing and Public Accommodation Non-Discrimination – Public policy decision makers should be advocated to pass legal protections for LGBTQ people in housing and public accommodations. Employees who can operate freely in the marketplace without the stresses of biased treatment are better able to focus on productivity and performance at work.
**BIOSCIENCES & HEALTH CARE**

**PRINCIPLE**
Advocate collaboratively with Arizona stakeholders to support the discovery, development, commercialization, delivery and availability of bioscience innovations.

**POSITIONS**

**MEDICAL DEVICE TAX REPEAL**

Protect Arizona’s growing medical device industry, which provides direct and indirect employment for nearly 20,000 Arizonans. The federal Medical Device Tax impacts innovation of medical devices and creates an excessive burden upon Arizona’s startup firms. The two-year (2017-2018) suspension of the tax is a significant step in the right direction. Permanent repeal would provide a degree of certainty that is needed by MedTech entrepreneurs, manufacturers and investors in this important economic sector.

**NEW AND EMERGING TECH**

**SUPPORT NEW AND EMERGING TECHNOLOGY PLATFORMS THROUGH THOUGHTFUL POLICIES**

**PRINCIPLE**
Advancements in cloud computing, mobility, machine to machine (M2M) and unified communications platforms, as well as the growing commercial significance of unmanned aerial vehicles (UAVs) and applications such as mobile payments are rapidly creating new opportunities for economic advancement while also raising a host of new public policy considerations.

**POSITIONS**

- Work to establish the investment, regulatory and legal environment that will allow broader adoption of the Internet of Things (IoT) by:
  - Promoting congressional passage of the Developing Innovation and Growing the Internet of Things (DIGIT) Act (S.88).
  - Working with the stakeholder community to continue developing and strengthening the Department of Homeland Security and National Institute of Standards and Technologies IoT Security Frameworks.
  - Working within the National Telecommunications and Information Administration (NTIA) IoT Security Updatability working groups to seek a common set of IoT-related standards.
  - Monitoring and addressing any IoT security-related legislation.
- Work with the Arizona Technology Council’s stakeholder community to help define and advocate for the role of smart technology in the 21st century infrastructure ecosystem.
- Work with the smart community stakeholders to continue seeking advancements that will lead to more widespread adoption of smart technology products and services.
- Seek policy advancements and best practices around cloud, mobility, big data, open data, data analytics, blockchain and UAVs. Continue to support and collaborate with the Big Data Regional Innovation Hubs.
- While remaining mindful of legitimate privacy and safety implications, resist excessive regulation of UAVs to the point of unnecessarily curtailing legitimate commercial uses.
- Monitor the ongoing discussions on artificial intelligence and automation as they pertain to both the 21st century technology workforce and IoT.
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, improve accuracy of medical diagnoses, fight human trafficking, counter cyberattacks, unleash scientific discovery, enable farmers to increase crop yields, help investors maximize returns and help athletes perform injury-free. Moreover, AI will augment human abilities in ways that will increase productivity, which stands to foster widespread 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 work and live. To ensure 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** — Governments should support the controlled testing of AI systems to help industry, academia and other stakeholders improve the technology.

- **Foster AI Innovation** — Public policy should promote investment, make available funds for R&D, and address barriers to AI development and adoption.
- **Address Global Societal Challenges** — AI-powered flagging 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.
- **Allay 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.
- **Program 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 in demonstrating the applications of AI in its interactions with citizens and invest sufficiently in infrastructure to support and deliver AI-based services.

**Create New Human Employment Opportunities and Protect People’s Skills** — AI will change the way we work. Public policy in support of adding skills to the workforce and promoting employment across different sectors should enhance the ongoing process of protecting people’s welfare and fostering wide-scale economic progress.

- **Rethinking human employment opportunities** — Governments should partner with industry, academia and other stakeholders for the promotion of AI and debate ways to maximize its benefits for the economy.
- **Prepare a Workforce for AI** — Governments should implement policies that mitigate AI’s impact on jobs and develop policies that promote employment. These programs should particularly focus on the effectiveness of incentive programs in government-funded infrastructure projects.
- **Retaining** — Governments should implement policies that support the upskilling and the retraining 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.
- **LibeData Responsibly** — AI is powered by access to data. Machine learning algorithms benefit by analyzing more data over time. 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 unnecessary 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 regulatory methods to encourage the development of testing datasets.
- **Federize Access to Data** — Governments should partner with industry to make datasets available 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 reconsider how we apply these models to new technology.
- **Adopt Robust Privacy Laws** — Based on the OECD Fair Information Practice Principles.
- **Implement Privacy by Design** — Rethink privacy approaches to implement Privacy by Design into our current and next generation projects.
- **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.

**Data to Protect AI 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 clarify and mitigate discrimination caused by the use of AI and encourage including protections against these harms in the design.

**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 and harms 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.
PRINCIPLE
We are living in an era where 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 economists are based on the command of knowledge and information." It is essential that the US retains its investment in R&D.

In research and development
• The Networking and Information Technology Research and Development (NITRD) budgets:
  • The national labs and Federally Funded Research and Development Centers (FFRDCs). These 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.
  • Funding of the Small Business Innovation Research (SBIR) program. SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization.

Key Points:
• Government R&D investment has a rich history of driving technological innovation. Where would we be without the global positioning system (GPS) to guide our way? Without the $4.5 million in National Science Foundation grants, two Stanford University graduate students would never have stumbled upon a new algorithm that later turned into the Google search engine. The list of innovations goes on and on.
• R&D investment that helps drive private-public sector collaboration is critical. The government funds research programs that directly provide grants to academia, industry, and institutions, especially for basic and applied research that will create the next generation of ideas and inventions. Many federal agencies, especially the Department of Defense, NASA, the Department of Energy and the Department of Health and Human Services, have critical R&D functions. The research arms of the Department of Defense — the Defense Advanced Projects Agency (DARPA) and the Intelligence Advanced Projects Agency (IAA) — also invested greatly in the development of technologies, especially related to national security and the warfighter. The Science and Technology Directorate of the Department of Homeland Security helps fund lab programs with a priority on “leap-ahead” technologies and critical R&D functions. The research arms of the Department of Defense — the Defense Advanced Projects Agency (DARPA) — and the Intelligence Advanced Projects Agency (IAA) — have invested greatly in the development of technologies, especially related to national security and the warfighter.

The Arizona Technology Council supports increases in R&D funding that address some of our greatest challenges, including cybersecurity, Smart Cities, big data, quantum computing, space exploration, health and medicine, and the Internet of Things.

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, we support increases to the following federal R&D budgets:
• The Networking and Information Technology Research and Development (NITRD) program, is a federally funded program designed to increase coordination, productivity and effectiveness among federal agency R&D efforts in networking and IT. According to the White House, the NITRD budget request for fiscal year 2018 is $11 billion. This program can be successful in helping to drive innovation.
• The Defense Advanced Research Projects Agency (DARPA) R&D budget. DARPA has helped drive innovation on a number of issues, including connected vehicles, spectrum, cybersecurity, the Internet of Things, and blockchain technology.
• The national labs and Federally Funded Research and Development Centers (FFRDCs). These 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.
• Funding of the Small Business Innovation Research (SBIR) program. SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization.

Key Points:
• Government R&D investment has a rich history of driving technological innovation. Where would we be without the global positioning system (GPS) to guide our way? Without the $4.5 million in National Science Foundation grants, two Stanford University graduate students would never have stumbled upon a new algorithm that later turned into the Google search engine. The list of innovations goes on and on.
• R&D investment that helps drive private-public sector collaboration is critical. The government funds research programs that directly provide grants to academia, industry, and institutions, especially for basic and applied research that will create the next generation of ideas and inventions. Many federal agencies, especially the Department of Defense, NASA, the Department of Energy and the Department of Health and Human Services, have critical R&D functions. The research arms of the Department of Defense — the Defense Advanced Projects Agency (DARPA) — and the Intelligence Advanced Projects Agency (IAA) — also invested greatly in the development of technologies, especially related to national security and the warfighter. The Science and Technology Directorate of the Department of Homeland Security helps fund lab programs with a priority on “leap-ahead” technologies and critical R&D functions. The research arms of the Department of Defense — the Defense Advanced Projects Agency (DARPA) — and the Intelligence Advanced Projects Agency (IAA) — also invested greatly in the development of technologies, especially related to national security and the warfighter.

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, we support increases to the following federal R&D budgets:
• The Networking and Information Technology Research and Development (NITRD) program, is a federally funded program designed to increase coordination, productivity and effectiveness among federal agency R&D efforts in networking and IT. According to the White House, the NITRD budget request for fiscal year 2018 is $11 billion. This program can be successful in helping to drive innovation.
• The Defense Advanced Research Projects Agency (DARPA) R&D budget. DARPA has helped drive innovation on a number of issues, including connected vehicles, spectrum, cybersecurity, the Internet of Things, and blockchain technology.
• The national labs and Federally Funded Research and Development Centers (FFRDCs). These 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.
• Funding of the Small Business Innovation Research (SBIR) program. SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization.

Key Points:
• Government R&D investment has a rich history of driving technological innovation. Where would we be without the global positioning system (GPS) to guide our way? Without the $4.5 million in National Science Foundation grants, two Stanford University graduate students would never have stumbled upon a new algorithm that later turned into the Google search engine. The list of innovations goes on and on.
• R&D investment that helps drive private-public sector collaboration is critical. The government funds research programs that directly provide grants to academia, industry, and institutions, especially for basic and applied research that will create the next generation of ideas and inventions. Many federal agencies, especially the Department of Defense, NASA, the Department of Energy and the Department of Health and Human Services, have critical R&D functions. The research arms of the Department of Defense — the Defense Advanced Projects Agency (DARPA) — and the Intelligence Advanced Projects Agency (IAA) — also invested greatly in the development of technologies, especially related to national security and the warfighter.

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, we support increases to the following federal R&D budgets:
• The Networking and Information Technology Research and Development (NITRD) program, is a federally funded program designed to increase coordination, productivity and effectiveness among federal agency R&D efforts in networking and IT. According to the White House, the NITRD budget request for fiscal year 2018 is $11 billion. This program can be successful in helping to drive innovation.
• The Defense Advanced Research Projects Agency (DARPA) R&D budget. DARPA has helped drive innovation on a number of issues, including connected vehicles, spectrum, cybersecurity, the Internet of Things, and blockchain technology.
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.

Recently, Congress has taken several positive steps to help facilitate the IoT discussion. In August 2017, the Developing Innovation and Growing the Internet of Things (DIGIT) Act was passed out of the Senate. In 2016, the House Energy and Commerce Committee established a bipartisan IoT working group. In 2015, Reps. Suzan DelBene (D-WA) and Darrell Issa (R-CA) created the Congressional Internet of Things Caucus.

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 Arizona Technology 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 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. We already have federal and state privacy and data security laws on the books, and passing IoT-specific legislation at this point in time 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 NTIA IoT security multi-stakeholder process as well as the NIST Cybersecurity Framework.

**Broadband:**
The Council supports deployment of a robust broadband infrastructure to support the expansion of IoT. To accomplish this, we need support from federal, state and local governments to assist in facilitating broadband deployment (see Encourage Broadband Deployment and Improve Broadband Access section for details).

**Spectrum:**
To support the growth in IoT devices, 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 (see Free Up Spectrum for Innovation, Rural Broadband and IoT section for details).

**Privacy & 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” best practices and risk mitigation to provide businesses, government and citizens with maximum trust in IoT.

**Standards:**
We support 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:**
We support 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, we support a governance structure led by the Department of Commerce that incorporates all federal agency stakeholders.

**Key Points:**
- According to the CompTIA’s “Sizing Up the Internet of Things” report, proprietors estimate $51 billion connected devices by the year 2020 and $1.9 trillion in global economic value-add. This iteration of IoT is different than prior eras due to the dramatic rise in computing power and storage capacity offered at ever-lower prices; coupled with the miniaturization of sensors and chips, robust wireless networks, IPv6 and a software-defined world, to name a few enabling factors. The information being generated by IoT devices has the ability to connect everything to everything else – not just communication between the different devices but entire industries.
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
The Arizona Technology Council supports the Smart Cities and Communities Act of 2017. The legislation would provide $220 million of smart city infrastructure investment per year over five years and help coordinate all of the various federal agency smart city initiatives, as well as create a technology demonstration grant program.

As cities grow their smart technology and services capabilities, the Council also believes there can be 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 IoT smart city and community ecosystem.

• Cybersecurity – With internet-connected sensors, best-in-class cybersecurity solutions and applications are an absolute necessity. A well-trained workforce will need to implement the cyber solutions across the infrastructure ecosystem.

• Analytics – An immense amount of data streaming from IoT sensors will need to be analyzed. City governments will need to beef up their analytical capabilities to ensure citizens gain the most benefits from the analyzed data.

Key Points:
Anticipated benefits of smart city solutions include cost savings from operational efficiencies, optimized use of resources, improved government services and interaction for citizens, better stream of data to improve decision-making, and the opportunity to attract technology-vvancy workers and businesses.

Government personnel remain optimistic about the promise of smart cities. Nearly three-quarters of the 350 government officials surveyed by CompTIA have a positive view of smart city developments.

There are also barriers to adoption. The No. 1 concern of both government personnel and citizens is obtaining funding for a smart city project. Most cities are under tight budget constraints, making it difficult to allocate funds for new projects. Another top concern is cybersecurity. With thousands of sensors being embedded into their infrastructure, cities will have to ensure the physical cybersecurity of the infrastructure. There is also the question of an adequate cybersecurity workforce. Forty percent of government officials and personnel cite skill gaps and a lack of necessary expertise as a primary area of concern affecting the expansion of smart city initiatives.

Citizen interest is strong. Six out of 10 Americans are interested in living in a smart city. There is reason to be optimistic, as 13 percent of municipalities report a fully operational smart cities initiative and 35 percent have some sort of pilot underway.

BROADBAND AND TELECOM
ADDRESS AVAILABILITY AND DELIVERY OF BROADBAND COMMUNICATIONS

PRINCIPLE
The Internet is the infrastructure of the global economy. To ensure innovation, economic growth and social interaction, it is imperative that we keep the Internet open, encourage deployment of new, faster broadband networks and find ways to get more Americans online.

POSITIONS

• Support policies that improve broadband competition and the growth of IoT by removing barriers to the deployment of broadband infrastructure, including wireless infrastructure such as small cells.

• Promote policies to get more Americans online and to increase broadband adoption.

• Advocate policies to make more spectrum available for licensed, lightly licensed and unlicensed use to support 5G, IoT and rural broadband.

Specifically, advocate implementing incentives to encourage government spectrum users to share, sell or lease their spectrum.
**PRINCIPLE**

The Internet is at the heart of today’s global economy. However, many Americans still don’t have access to broadband Internet under the Federal Communication Commission’s new definition of 25 megabits per second (Mbps) up and 3 Mbps down, and most don’t have a choice of broadband providers. Additionally, the rapidly expanding Internet of Things market necessitates a robust broadband infrastructure to support it.

Deploying broadband infrastructure is a massive undertaking that requires significant upfront investment that companies may not recoup for decades. Yet, deployment is made even more difficult by regulatory barriers at every step of the process. These barriers to deployment keep companies from investing more into infrastructure and potentially keep new entrants from entering the market. Competition is the key to better broadband access. To increase competition, government should be encouraging private investment, not discouraging it.

**Key Points:**
- The Internet is at the heart of today’s global economy.
- Many Americans still don’t have access to broadband Internet.
- Competition is the key to better broadband access.
- Government should be encouraging private investment, not discouraging it.

**FINANCIAL TECHNOLOGY**

Emerging financial technology (FinTech) such as blockchain has the potential to revolutionize many sectors of the United States economy promising to bring significant efficiencies to global supply chains, financial transactions, asset ledgers and decentralized social networking if the proper legislative and regulatory measures are taken to enable and foster its development. The federal government must create new laws and regulatory structures as the technology evolves in order to provide a workable and stable legal structure upon which innovations can rely.

The U.S. Commodity Futures Trading Commission (CFTC) has put forth a principle that just as the Internet was not unduly hindered by regulatory structure and allowed to grow through a “do no harm principle” of regulation, now is the time to allow blockchain technology to evolve. This is a commonsense principle that should be the basis of any legislation or regulation in respect to blockchain.

Further, the federal government should take steps to determine its own internal use cases, develop pilot projects and integrate into their processes going forward. This ultimately will provide government officials with a hands-on understanding of the technology, and put administrators and lawmakers in a better position to craft legal and regulatory structures that work for a broad array of stakeholders.

**POSITIONS**

Congressional Blockchain Caucus – The formation of the caucus has been a great demonstration of the federal government’s commitment to the technology and it should continue to pursue research and development of responsible legislation and governmental applications of blockchain. The caucus should strive to create a working group within the government to identify internal use cases, for example, in the area of government record storage and tracking. The more government actors that work with the technology, the better their own understanding will be. With an increase in understanding comes more prudent regulation and legislation.

Initial Coin Offerings – The Securities and Exchange Commission (SEC) should work with Congress and stakeholders to create a responsible framework for regulating initial coin offerings (ICO) as differentiated from their regulation of security offerings. The SEC has legitimate cause for concern and needs to protect investors from schemes that have arisen or may arise out of ICOs. However, there cannot be a total prohibition, nor can we simply treat ICOs as securities. Instead, there is a need for rules that allow further development in this area while also incorporating the necessary safeguards for investors.
FINANCIAL TECHNOLOGY CONTINUED

**FinTech Business Charters** — The U.S. Department of the Treasury's Office of the Comptroller of the Currency should work with Congress and stakeholders to define and offer FinTech business charters that differ from current bank charters, reducing regulatory burdens for non-bank companies and virtual money-based business models.

**Currency Regulation** — Congress should adopt the Cryptocurrency Tax Fairness Act to allow tax exemptions for cryptocurrency transactions under $100. This is a pivotal step to the broader adoption of cryptocurrencies and should be taken in conjunction with state governments clarifying their own regulations for financial technology. For example, state governments should work with the federal government to create uniform laws for virtual currencies that establish regulatory sandbox and regulatory reciprocity and interoperability between states and jurisdictions.

**Regulatory Sandbox** — Congress should act to federalize all the regulatory sandbox initiatives that states and jurisdictions have already taken in conjunction with state governments clarifying their own regulations. One example of such discretion is Title X, Section 1022(b)(3) of the Dodd-Frank Act allowing the Consumer Financial Protection Bureau to exempt certain categories of transactions from its authority.

**Federal Government Support** — The federal government should partner with industry, academia and other stakeholders for the promotion and adoption of blockchain technology in ways to maximize its benefits for the economy, including making funds available for research and development in targeted industry sectors.

**FinTech Business Charters**

- Define and offer FinTech business charters that differ from current bank charters, reducing regulatory burdens for non-bank companies and virtual money-based business models.

- Congress should adopt the Cryptocurrency Tax Fairness Act to allow tax exemptions for cryptocurrency transactions under $100. This is a pivotal step to the broader adoption of cryptocurrencies.

- Congress should act to federalize all the regulatory sandbox initiatives that states and jurisdictions have already taken, working with state governments to clarify their own regulations.

**Key Points**

- Congress, the FCC, NTIA and other government agencies must do everything within their power to make more spectrum available for licensed, unlicensed and lightly licensed uses. Specifically, the Arizona Technology Council supports:
  - More Federal Spectrum Available for Both Licensed & Unlicensed Use Without Technology-Specific Restrictions on its Use — The federal government is the largest holder of spectrum suitable for wireless use, and even if its officials admit the government is not using the spectrum efficiently. Clearing and auctioning spectrum is one effective way to get government spectrum to the hands of those who need it most, be it for licensed or unlicensed use, without placing technology-specific restrictions on how it may be used.
  - Moving Forward on 5 GHz — The FCC has already made great strides on freeing up unlicensed spectrum in the 5 GHz band but it should continue to work towards making spectrum available in the 2.4-2.5 GHz range, allowing companies to experiment and innovate without the burden of certain regulations.
  - Continuing to Pave the Way for 5G — The FCC took a major step towards making 5G a reality with its Spectrum Frontiers Order, which opened up nearly 12 GHz of licensed and unlicensed spectrum for flexible-use wireless broadband. There is still work to be done. The FCC recently released a notice of inquiry on making mid-band spectrum for both licensed and unlicensed use available. We hope it expeditiously moves the proceeding along to a notice of proposed rulemaking.

**Positions**

- The FCC has already made great strides on freeing up unlicensed spectrum in the 5 GHz band. It should continue to work towards making spectrum available in the 2.4-2.5 GHz range, allowing companies to experiment and innovate without the burden of certain regulations.

- Continuing to Pave the Way for 5G — The FCC took a major step towards making 5G a reality with its Spectrum Frontiers Order, which opened up nearly 12 GHz of licensed and unlicensed spectrum for flexible-use wireless broadband. There is still work to be done. The FCC recently released a notice of inquiry on making mid-band spectrum for both licensed and unlicensed use available. We hope it expeditiously moves the proceeding along to a notice of proposed rulemaking.

**PRINCIPLE**

Wireless broadband use has skyrocketed in recent years and demand for wireless data is expected to continue to grow exponentially in the coming years. Wireless speeds are also increasing, and in some rural areas, it may be a better long-term solution to broadband access than wireless broadband. However, there simply is not enough available spectrum to meet this coming demand, even if unlicensed spectrum begins to carry more and more of the wireless traffic. The growth of the Internet of Things (IoT) market is creating even more demand for spectrum and the number of IoT devices in use will continue to increase.

- Auditing more spectrum licenses alone cannot meet the ever-growing demand. Unlicensed spectrum is an essential complement to licensed spectrum. It is used for Wi-Fi, Bluetooth, offloading wireless traffic, and providing broader service coverage. However, companies that use unlicensed spectrum can only do so with spectrum licenses to use spectrum in innovative, new ways. There are no existing incentives in place to encourage federal agencies to share spectrum.

**Free Up Spectrum for Innovation, Rural Broadband and IoT**

- More Federal Spectrum Available for Both Licensed & Unlicensed Use Without Technology-Specific Restrictions on its Use — The federal government is the largest holder of spectrum suitable for wireless use, and even if its officials admit the government is not using the spectrum efficiently. Clearing and auctioning spectrum is one effective way to get government spectrum to market but it is too costly in many situations. We must come up with new, creative ways to get government spectrum in the hands of those who need it most, be it for licensed or unlicensed use, without placing technology-specific restrictions on how it may be used.

- Moving Forward on 5 GHz — The FCC has already made great strides on freeing up unlicensed spectrum in the 5 GHz band but it should continue to work towards making spectrum available in the 2.4-2.5 GHz band.

- Continuing to Pave the Way for 5G — The FCC took a major step towards making 5G a reality with its Spectrum Frontiers Order, which opened up nearly 12 GHz of licensed and unlicensed spectrum for flexible-use wireless broadband. There is still work to be done. The FCC recently released a notice of inquiry on making mid-band spectrum for both licensed and unlicensed use available. We hope it expeditiously moves the proceeding along to a notice of proposed rulemaking.

**Key Points**

- Cisco forecasts mobile data usage will increase nearly twentyfold in the United States from 2016 to 2021.Cisco projects an eightfold increase in mobile traffic from 2017 to 2022Cisco expects there may be more 5G connections than mobile connections worldwide by 2021. The company also forecasts more than 10 percent of IoT connections will rely on unlicensed spectrum by 2022.

- The last major spectrum auction for the foreseeable future, the Broadcast Television Incentive Auction, concluded in 2017 and yielded $19.8 billion. Made available was 84 MHz of spectrum: 70 MHz for licensed use and 14 MHz for unlicensed use. The last major auction for returning spectrum began in 2017 and yielded $19.8 billion. Made available was 84 MHz of spectrum: 70 MHz for licensed use and 14 MHz for unlicensed use. The last major auction for returning spectrum began in 2017 and yielded $19.8 billion. Made available was 84 MHz of spectrum: 70 MHz for licensed use and 14 MHz for unlicensed use. The last major auction for returning spectrum began in 2017 and yielded $19.8 billion. Made available was 84 MHz of spectrum: 70 MHz for licensed use and 14 MHz for unlicensed use.

- Ericsson expects there may be more 5G connections than mobile connections worldwide by 2021. The company also forecasts more than 10 percent of IoT connections will rely on unlicensed spectrum by 2022.

- The last major spectrum auction for the foreseeable future, the Broadcast Television Incentive Auction, concluded in 2017 and yielded $19.8 billion. Made available was 84 MHz of spectrum: 70 MHz for licensed use and 14 MHz for unlicensed use. The auction marked the last known source of sub-3 GHz spectrum suitable for licensed wireless use.

- No incentives currently are in place to encourage federal agencies to share their spectrum.
ADVANCE TAX & REGULATORY POLICIES THAT SPUR INNOVATION AND GROW OUR ECONOMY

PRINCIPLE

The U.S. technology industry is a $1 trillion market that employs nearly 7 million Americans. Fiscal discipline and targeted funding for investments in innovation are essential to continue economic growth. The Arizona Technology Council supports reasonable tax policies that promote research and development (R&D), innovation, entrepreneurship and capital investment.

POSITIONS

- Creating a fair, competitive, balanced tax code encouraging investment and innovation that does not adversely affect small businesses, including pass-through entities, by:
  - Lowering the corporate tax rate to 20 percent and adopting a territorial tax system to incentivize companies to repatriate their profits.
  - Creating a “patent box” to encourage companies to invest in domestic innovation that does not adversely affect small businesses, including pass-through entities.
  - Protecting the research and development tax credit to incentivize experimentation and innovation.
  - Disallowing interstate sales tax legislation that results in additional compliance burdens on small businesses and removing any legislation to include a small business exemption.
- Enforcing market-based sales tax collection rules ensuring state-to-state commerce.
- Supporting certainty in sales tax applications by enacting the Digital Goods and Services Tax Fairness Act.
- Reducing the cost of compliance burdens by enacting the Business Activity Tax Simplification Act.

AFFILIATE NEXUS

PRINCIPLE

The debate around the Marketplace Fairness Act may be dead but Congress hasn’t completely given up on the idea of taxing Internet sales across state lines. In September 2016, Rep. Rob Goodlatte (R-VA), chairman of the House Judiciary Committee, released the long-anticipated discussion draft of the Online Sales Simplification Act of 2016 (OSSA), which differs significantly from the Remote Transactions Parity Act introduced by Rep. Raja Krishnamoorthi (D-IL) and the Marketplace Fairness Act introduced by Sen. Mike Enzi (R-WY).

The proposed OSSA is a hybrid system that would collect sales taxes at a single rate of the state where the consumer resides but remit those taxes to the state where the seller is located. OSSA features include:
- The bill implements Goodlatte’s much-discussed “hybrid-origin” approach and removes the Quill physical presence requirements for sales tax collection obligations under certain circumstances.
- States may impose sales tax on remote sales if the state is the origin state and participates in a statutory clearinghouse, and the tax uses the origin state base and the destination state rate for participating states. (The origin state rate is used if the destination state does not participate in the clearinghouse).
- A remote seller will only have to remit the tax to its origin state for all remote sales.
- A destination state may only have one statewide rate for remote sales.
- Only the origin state may audit a seller for remote sales.
- The Bill implements Goodlatte’s much-discussed “hybrid-origin” approach and removes the Quill physical presence requirements for sales tax collection obligations under certain circumstances.
- States may impose sales tax on remote sales if the state is the origin state and participates in a statutory clearinghouse, and the tax uses the origin state base and the destination state rate for participating states. (The origin state rate is used if the destination state does not participate in the clearinghouse).
- A remote seller will only have to remit the tax to its origin state for all remote sales.
- A destination state may only have one statewide rate for remote sales.
- Only the origin state may audit a seller for remote sales.

- States that do not participate in the clearinghouse have significant restrictions on the ability to extract the tax from the remote seller.

However, while Congress is still debating a national approach, sales tax nexus legislation is emerging as a national trend with over half the country considering some form of legislation similar to that outlined in the Federal Marketplace Fairness Act. With little action at the federal level and U.S. Supreme Court Justice Anthony Kennedy’s recent opinion in DMA v. Brohl suggesting Quill may no longer represent the appropriate standard for sales tax collections, states are attempting to challenge Quill by introducing state-specific legislation. In an effort to collect state sales taxes on remote transactions, a number of legislative proposals would require all remote sellers to collect sales taxes and remit them to the state where the consumer resides.

POSITIONS

The Arizona Technology Council supports solutions that would not increase the compliance burden on medium and small businesses, not create systems that would force sellers to abandon Internet sales into other states, continue to foster online commerce, create a small seller exemption for small business, and protect businesses from new and costly regulations or taxes.

The debate over the collection of sales taxes on remote transactions should be reframed to balance the needs of states to collect these taxes with the ability of businesses to cover these new compliance costs. States need to collect sales and use taxes owed but the costs associated with moving the compliance burden from individual taxpayers onto businesses must also be weighed.
DIGITAL GOODS AND SERVICES

**PRINCIPLE**

According to recent data, 88 percent of Americans are using the Internet and over 200 million Internet users will make an online purchase this year alone. 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. Given the importance of the digital economy to our member companies and the need to ensure they can continue to foster innovation and economic growth within this sector, the Arizona Technology Council strongly supports the Digital Goods and Services Tax Fairness Act. This legislation would provide consistency in determining which jurisdiction can tax the same digital good or service, and a framework must be established to ensure a single purchase is sourced in one state, not multiple states.

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 state/local governments while preventing duplicative and discriminatory taxes.

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:

- First, 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 Telephone 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.

- Secondly, 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.

MOBILE WORKFORCE

**PRINCIPLE**

The Council supports legislation such as the Digital Goods and Services Tax Fairness Act. This legislation will prevent hardships 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.

Given the importance of the digital economy to our member companies and the ability for businesses to better deliver digital goods and services, 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:

- First, 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 Telephone 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.

- Secondly, 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.

**POSITIONS**

The Arizona Technology Council supports H.R. 1393/S. 540, the Mobile Workforce State Income Tax Simplification Act of 2017, which would establish national standards for state income taxation of non-residents. The House passed this legislation on June 20, 2017. This legislation would allow employer wages or compensation to be taxed only by the state of the employee’s residence and the state within which the employee is present and performing employment duties for more than 50 days during the calendar year.

Employees who are required to move from state to state should not be required to file and pay state income taxes for brief periods of work, i.e., 30 days or less. This legislation does not exempt the employee from state taxes. It just provides that only the employee’s state of residence or any state in which the employee worked for more than 30 days are permitted to require the employee to file and remit state taxes.

The Council supports legislation at the state level that simplifies nonresident employees and employer requirements to report and withhold state income taxes.

The Council supports the balance between the business needs of today’s mobile workforce and each state’s authority to determine its own tax law.
PRINCIPLE
Our system of corporate taxation puts U.S. companies at a competitive disadvantage with their global competitors and is in urgent need of an overhaul. The last major tax reform occurred in 1986. While many support reform, congressional debate continues and timing for action remains uncertain.

Therefore, during this debate the technology industry must ensure any corporate tax reform proposals equitably treat the technology industry — both large companies, as well as small and medium-sized businesses.

POSITIONS
The Arizona Technology Council supports several concepts within the broader context of corporate tax reform:

• Reduce the Corporate Tax Rate to 20 Percent — To better align the U.S. technology industry for growth, we support reducing the corporate tax rate to no higher than 20 percent without increasing taxes on small- and medium-sized businesses. U.S. companies are burdened with the highest corporate tax rate among Organisation for Economic Co-operation and Development (OECD) countries, making them less competitive with their foreign counterparts. Although the international average corporate tax rate has declined consistently since 2003, the United States has not followed suit.

• Enact a Territorial International Tax System — We support enactment of a territorial international system that would remove the punitive tax that prevents foreign earnings from being repatriated to the United States. Our nation is one of a handful of developed countries that tax corporate earnings on a global basis. This means a company’s foreign earnings are subject to U.S. tax when repatriated, increasing the foreign tax rate on those earnings to the U.S. rate. Under a territorial international system, firms will be incentivized to innovate and invest domestically regardless of where the firm’s profits are located. Since 2000, the number of OECD countries that employ a territorial system increased from 17 to 27. 318. The U.S. maintains a global system and ignores reforms with the potential to make available approximately $1.7 trillion and allow the U.S. tax code to regain a competitive global edge.

• Tax Repatriated Profits at a Lower Rate — We support legislation that incentivizes U.S.-based companies to reinvest profits back into the United States by allowing those repatriated profits to be taxed at a lower rate. Currently, companies are discouraged from repatriating their profits because of the high corporate tax rate that would result. Encouraging the return of those profits to the United States would help stimulate domestic economic activity not possible previously. According to a discussion paper by the Society of Economic Dynamics published via the Information Technology and Innovation Foundation, in 2014, labor productivity—just one metric of economic vitality—would have been 4.5 percent higher in “IT-intensive” industries had the repatriation of overseas profits allowed the U.S. economy to realize its full returns.

CORPORATE TAX REFORM

• Tax Innovation Box Profits at a Lower Rate Than the Corporate Rate — We support policies that foster innovation such as a patent box to attract and retain domestic intellectual property (IP) development and ownership. A lower rate of taxation on innovation would encourage companies to continue to reinvest in domestic IP development, which would fuel organic job growth, spur creativity and allow the U.S. technology industry to remain competitive globally.

• Make the CFC Look-Through Rule Permanent — The territorial provisions of most other developed countries allow domestically-based companies operating abroad to structure their foreign operations without the additional home country tax of the sort imposed by the U.S. Subpart F rules. In December 2015, the rule was extended through fiscal year 2020 in the fiscal 2016 omnibus. Making the CFC Look-Through permanent would allow U.S.-based companies to marshal their capital outside the United States in a way that would enable them to compete on a more level playing field with their foreign counterparts.

• Protect the Research and Development (R&D) Tax Credit — Made permanent in 2015, the R&D tax credit leverages tax reform to incentivize experimentation and innovation. Consequently, it increases the aggregate amount of knowledge in society and the economy; and elevates productivity, wages and the standard of living. However, since 1992 the U.S. has fallen from first to 25th among OECD nations dedicated to pursuing R&D credits. Given that R&D tax credits have proven to immediately stimulate innovation while also encouraging long-term economic growth, we support such policies that maximize the social value of the dollar and promote the well-being of the U.S. technology industry and global economy at large.

• Enact a Territorial International Tax System — We support enactment of a territorial international system that would remove the punitive tax that prevents foreign earnings from being repatriated to the United States. Our nation is one of a handful of developed countries that tax corporate earnings on a global basis. This means a company’s foreign earnings are subject to U.S. tax when repatriated, increasing the foreign tax rate on those earnings to the U.S. rate. Under a territorial international system, firms will be incentivized to innovate and invest domestically regardless of where the firm’s profits are located. Since 2000, the number of OECD countries that employ a territorial system increased from 17 to 27. 318. The U.S. maintains a global system and ignores reforms with the potential to make available approximately $1.7 trillion and allow the U.S. tax code to regain a competitive global edge.
Economic expansion in technology rests on the creation of new and innovative business models that leverage Internet-based platforms that are trusted, secure and accessible. We support encryption backdoors and requirements for companies to "unlock" their products on demand. Industry, legislators and law enforcement must work together to establish frameworks for secure data and explore cooperative approaches to help law enforcement keep Americans safe. Any decisions to weaken or limit encryption will have harmful effects on the overall digital economy, including making digital systems more vulnerable, increasing costs for consumers as risks increase and companies pass on greater operational expenses, decreasing competitiveness of U.S. businesses seeking international market share, and dimming U.S. leadership in setting policies to improve cybersecurity.

The debate over encryption has gained more attention recently as some law enforcement agencies have complained about their lack of access to data. These complaints have been spurred by decisions of some mobile and cloud-based service providers to upgrade their security controls so their customers can retain the keys used to encrypt their data, thereby locking out third parties such as law enforcement.

However, these complaints are not new. The past few decades have seen a steady stream of advancements in encryption, and many companies have integrated encryption into popular products and services to improve security for users. Some government agencies have pushed back on these kinds of improvements citing law enforcement and national security concerns. But while advances in encryption, along with more widespread adoption, certainly will make it harder for law enforcement and intelligence agencies to access some kinds of data, the overall impact on fighting crime and terrorism will be difficult to measure. As the debate continues, the Council will oppose federal and state legislation that creates encryption backdoors or other decryption policies that may threaten innovation and the protection of consumer privacy.

Key Points:

- Any decisions to weaken or limit encryption will have harmful effects on the overall digital economy.
- Law enforcement and intelligence agencies to access some kinds of data, the overall impact on fighting crime and terrorism will be difficult to measure.

Work to Reform the Electronic Communications Privacy Act (ECPA)

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 only with a subpoena to obtain access. The House unanimously passed the Email Privacy Act on an ECPA reform bill in both April 2016 and February 2017 but the bill repeatedly has stalled in the Senate Judiciary Committee and hasn't received a floor vote.

The Arizona Technology Council supports better cybersecurity practices both domestically and abroad by encouraging continued innovation in encryption. Congress, the administration and state legislatures can rebuild trust in the U.S. technology sector through strong data security practices at home, providing improved information security for consumers and businesses, law enforcement and national security officers are faced with significant new challenges to protecting critical infrastructure. Any decisions to weaken or limit encryption will have harmful effects on the overall digital economy, including making digital systems more vulnerable, increasing costs for consumers as risks increase and companies pass on greater operational expenses, decreasing competitiveness of U.S. businesses seeking international market share, and dimming U.S. leadership in setting policies to improve cybersecurity.

The debate over encryption has gained more attention recently as some law enforcement agencies have complained about their lack of access to data. These complaints have been spurred by decisions of some mobile and cloud-based service providers to upgrade their security controls so their customers can retain the keys used to encrypt their data, thereby locking out third parties such as law enforcement.

However, these complaints are not new. The past few decades have seen a steady stream of advancements in encryption, and many companies have integrated encryption into popular products and services to improve security for users. Some government agencies have pushed back on these kinds of improvements citing law enforcement and national security concerns. But while advances in encryption, along with more widespread adoption, certainly will make it harder for law enforcement and intelligence agencies to access some kinds of data, the overall impact on fighting crime and terrorism will be difficult to measure. As the debate continues, the Council will oppose federal and state legislation that creates encryption backdoors or other decryption policies that may threaten innovation and the protection of consumer privacy.

Key Points:

- Any decisions to weaken or limit encryption will have harmful effects on the overall digital economy.
- Law enforcement and intelligence agencies to access some kinds of data, the overall impact on fighting crime and terrorism will be difficult to measure.

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 at 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.

Key Points:

- On April 27, 2016, the U.S. House of Representatives passed the Email Privacy Act (H.R. 699) with a vote of 419-0. A reintroduced version of the Bill (H.R. 387) passed the House by voice vote on February 6, 2017.
- The Sixth Circuit Court of Appeals ruled in a 2016 case (U.S. v. Warshak) that, under the Fourth Amendment of the Constitution, law enforcement must use a warrant to acquire email content from providers. Most large email providers are already treating this as the law of the land and refusing to comply with subpoenas.

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 enable private power by codifying new powers for civil agencies that they do not already have. Civil agencies can still get access to emails and text by serving subpoenas on users, not service providers.

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 – The Email Privacy Act (H.R. 387), 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 it up. The ACC stakeholders believe that an ECPA reform bill is needed.

- The Civil War is Over – The Arizona Technology Council supports:

Specifically, the Arizona Technology Council supports:

- 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 at 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.

- 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 enable private power by codifying new powers for civil agencies that they do not already have. Civil agencies can still get access to emails and text by serving subpoenas on users, not service providers.

- 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.

- Congress Should Pass the Email Privacy Act as Passed by the House – The Email Privacy Act (H.R. 387), 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 it up. The ACC stakeholders believe that an ECPA reform bill is needed.

- The Civil War is Over – The Arizona Technology Council supports:

- 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 enable private power by codifying new powers for civil agencies that they do not already have. Civil agencies can still get access to emails and text by serving subpoenas on users, not service providers.
FEDERAL AGENCY PRIVACY & DATA SECURITY ENFORCEMENT

PRINCIPLE
Over the past several years, the Federal Trade Commission (FTC) has used its authority under the unfair and deceptive practices of Sec. 5 of the FTC Act to sanction companies for failure to adequately protect consumer data. This authority was upheld by the U.S. Court of Appeals for the Third Circuit in the Wyndham case.

The FCC's 2015 reclassification of broadband Internet access service as a telecommunications service means the FTC no longer has authority over broadband Internet service providers (ISPs). Instead, the FCC now has authority to enforce data privacy and protection practices for ISPs. The FCC passed new privacy and security rules in late 2016 but they were overturned by Congress earlier this year through the Congressional Review Act. The FCC is currently in the midst of another net neutrality rule-making, and we are awaiting the final version of the rules that could restore the FTC’s authority over ISPs’ privacy and data security practices.

POSITIONS
The Arizona Technology Council would prefer that authority is returned to the FTC to enforce data privacy and protection practices across the entire technology sector, including ISPs. Should the FCC choose not to reclassify broadband Internet access service as an information service in its Restoring Internet Freedom rule-making, we would advocate Congress to remove the common carrier exemption in the FTC Act and allow the FTC to regulate ISP data privacy and protection practices, harmonizing rules across the industry. If Congress does not act and the FCC does not reclassify broadband service, we would encourage the FCC to pass rules that function as close to the FTC’s rules as possible to preserve consistency in enforcement.

FEDERAL AGENCY PRIVACY & DATA SECURITY ENFORCEMENT

PRINCIPLE
Unmanned aerial vehicles (UAVs) offer immense opportunities for innovation, from cargo delivery to emergency response to photography. However, regulations are not in place to allow UAVs to be used 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 regulations still prevent UAVs from being used for a number of commercial purposes.

While the UAV industry is still nascent, a recent Association for Unmanned Vehicle Systems International study estimates the industry will generate more than $82 billion and create more than 100,000 jobs during the next 10 years.

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 both demonstrated interest in crafting rules for commercial 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 commercial 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.

PROMOTE RULES TO ALLOW USE OF COMMERCIAL UNMANNED AERIAL VEHICLES
Ninety-five percent of the global market resides outside the United States. The rules of trade—market access, fair and reciprocal treatment, transparency, and compliance—impact the flow of technology goods and services that meet the needs of businesses and consumers. According to CompTIA’s “Tech Trade Snapshot 2017,” the United States exported an estimated $309 billion in manufactured technology goods, software, and services in 2016. The Council supports trade policies and compliance strategies that create a level playing field for technology companies to compete in the global marketplace, and provide their goods and services to consumers around the globe.

**PRINCIPLE**

**China is one of the world’s largest markets for the information and communications technology (ICT) sector and a major market for U.S. technology companies.** The Council advocates for a level playing field for U.S. technology companies to compete in the global marketplace and provide their goods and services to consumers around the globe.

**Top policy priority issues the Council supports include:**

- **Secure commitment that China will refrain from any measure that requires U.S. companies to disclose source code or other intellectual property as a condition of doing business in China.**
- **Secure commitment that China will not restrict cross-border data flows for business purposes and will grant U.S. cloud service providers with full and nondiscriminatory market access.**
- **Secure commitment that China will refrain from any measure that requires U.S. companies to disclose source code or other intellectual property as a condition of doing business in China.**
- **Secure commitment that China will not restrict cross-border data flows for business purposes and will grant U.S. cloud service providers with full and nondiscriminatory market access.**

**EXPAND MARKETS, REDUCE BARRIERS, AND ADVOCATE FOR U.S. TECHNOLOGY GLOBALLY**

**PRINCIPLE**

Exports of products and services by the U.S. technology industry totaled an estimated $309 billion in 2016, according to CompTIA’s “Tech Trade Snapshot 2017.” Further, exports account for approximately $1 out of every $4 generated in the nation’s technology industry and directly support 40 percent of technology manufacturing jobs. The rules of trade—market access, fair and reciprocal treatment, and transparency—are critical to the flow of technology goods and services that meet the needs of businesses and consumers. The Council supports trade policies that expand and open markets for the U.S. technology sector, and establish new rules in digital trade.

**POSITIONS**

- Advocates for continued U.S. participation in the North American Free Trade Agreement and its modernization, as well as the current U.S.-Free Trade Agreement.
- Advocates for potential new U.S. free trade agreements to enhance trading relationships with key partners, such as the United Kingdom and Japan.
- Advocates for resuming trade negotiations previously launched, including the Transatlantic Trade and Investment Partnership and the Trade in Services Agreement.
- Engages in opportunities to enhance the trading relationship in key markets for the industry, including India, Vietnam, Indonesia, and Brazil.
- While considering effects of trade on the U.S. economy and jobs, promote policies that support U.S. workers and the ways the technology industry is creating jobs and economic growth.

**U.S. - CHINA ICT TRADE POLICY**

**Current Status:** The Trump administration is developing a policy towards China. On Aug. 18, 2017 the United States Trade Representative Robert Lighthizer initiated an investigation of China under section 301 of the Trade Act of 1974, which seeks to evaluate whether acts, policies, and practices of the Government of China related to technology transfer, intellectual property, and innovation are unreasonable or discriminatory and burden or restrict U.S. commerce. The Council supported comments to this investigation on Sept. 28, 2017.

On September 20, 2017, through the United States Information Technology Office; and, following ongoing engagement, including providing information submitted in response to the Federal Register notice regarding China’s compliance with its accession commitments to the WTO.

China’s protectionist policies in the ICT sector designed to nurture domestic technology and the transition of China to a free market economy.

Despite numerous attempts by the U.S. to engage China to alter these practices, there is growing concern that these policies could cause long-term damage to U.S. businesses—and the U.S. jobs they support—as these practices try to secure products into China, a market estimated to be worth about $600 billion.

A 2017 study by the American Chamber in the People’s Republic of China found that 53 percent of respondents said foreign businesses were less welcome in China than before, compared to 43 percent who asserted that in 2013. Further, 40 percent of respondents said lack of IP protection was a significant barrier to innovation in China.

China’s broad Cybersecurity Law and implementing regulations, along with existing and proposed restrictions on cloud and Internet services, limit the ability of U.S. companies to sell products and services in China.

The American Technology Council encourages the U.S. wherever possible to negotiate outcomes with China through bilateral and multilateral engagement, including through dialogues such as the U.S.-China Comprehensive Economic Dialogue (CED) and multilateral fora such as the WTO, as well as to forge new forms of alliances for cooperation with China such as the EU and Japan.

The Council also supports sanctions and export controls when they are required to meet U.S. national security and foreign policy goals.

- Encouraging the U.S. wherever possible to negotiate outcomes with China through bilateral and multilateral engagement, including through dialogues such as the CED and multilateral fora such as the WTO, as well as to forge new forms of alliances for cooperation with China such as the EU and Japan.

- Encouraging China’s integration into the global ICT ecosystem and the global institutions and agreements that support it.
PRINCIPLE

The Trump administration seeks to modernize the North American Free Trade Agreement (NAFTA) to reduce the trade deficit, support higher-paying jobs in the United States, and grow the U.S. economy by improving opportunities to trade with Canada and Mexico.

The United States Trade Representative Robert Lighthizer notified Congress in May 2017 of the intent to renegotiate NAFTA. The Arizona Technology Council welcomes a modernization of NAFTA to reflect the digital economy and innovative technology sector that has evolved since NAFTA went into effect.

Council members stress NAFTA should remain a trilateral agreement that rises to the objectives established by Congress in the Bipartisan Congressional Trade Priorities and Accountability Act of 2015 (TPA 2015). Priority negotiating objectives for Council members include market access, customs and trade facilitation, rules of origin, digital trade, government procurement and intellectual property.

Key Points:
- Since NAFTA entered into force in 1994, trade with Canada and Mexico has nearly quadrupled to $1.3 trillion.
- Trade with Canada and Mexico supports nearly 14 million American jobs, with nearly 5 million of these net jobs supported by the increase in trade generated by NAFTA.
- Since NAFTA was negotiated nearly 25 years ago, the role of the Internet, e-commerce and digital trade in international trade has expanded significantly.
- Modernizing NAFTA presents an opportunity to update the agreement in order to account for the significant growth of digital trade and trade in services that has moved beyond trade in traditional goods.
- Additionally, we urge the administration to preserve those provisions that have worked well and ensure that U.S. businesses are not disadvantaged by any modifications. These include continued elimination of the merchandise processing fee and rules of origin.

MODERNIZING THE NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA)

Current Status:
Renegotiations between the U.S., Canada and Mexico launched in Washington, D.C. on August 16, 2017 and continue on a swift timeline with negotiators meeting every three weeks, alternating locations between the three countries. Several important dates limit the time for the negotiation and the ambition to conclude the agreement by 2017 or early 2018. However, President Trump continues to threaten a withdrawal from NAFTA and that looms large in the negotiations.

POSITIONS
The Council supports the renegotiation of NAFTA with the following objectives:
- Continue to exclude NAFTA originating merchandise from the merchandising processing fee and all other border or customs processing fees.
- Adherence to WTO Information Technology Agreement (ITA, ITA2 and those under ITA 2018 review).
- Duty-free treatment for goods entered for repair or alteration.
- Parties to comply with the import licensing agreement with respect to any new or modified import licensing procedure.
- Avoid value-content thresholds, avoid process-based rules and confer origin based on classification changes (TPA 2015 statute).
- Prevent forced localization requirements of data centers and facilities, technology, intellectual property, and other assets.
- Prevent barriers to e-commerce trade and cross-border data flows.
- Ensure a free and open Internet, and protect the free flow of information through cross-border data flows.
- Adhere to the Valuation Agreement (Article VII of the General Agreement on Tariffs and Trade).
We exist to help science and technology companies of all sizes and stages succeed. By serving as the principal point of connection, the Arizona Technology Council helps build global partnerships to grow locally, get innovations noticed, and stay ahead of the curve.

Whether you’re a startup, emerging, or well-established company in Arizona, we offer resources designed to gain insight, education and connections. In addition to our networking opportunities, public policy support and professional development programs, our members receive exclusive discounts on products and services and are provided numerous opportunities to get the word out about their unique value.

Take a fresh look and watch us grow with you as we continue to offer you membership benefits that will bring you closer to meeting your business goals.
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 North Central Avenue, Suite 1530,
Phoenix, Arizona 85004
602.343.8324
info@aztechcouncil.org

TUCSON
9040 South Rita Road, Suite 1150,
Tucson, Arizona 85747
520.382.3281

THANK YOU TO OUR 2018 PUBLIC POLICY GUIDE SPONSOR

IDEAS COLLIDE