



The Tech Council's 2023 'white papers' – a summary

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In keeping with our history of biennial "white paper" reports by the Tech Council, our recommendations fall into four major categories:

1. Enhance workforce development and training, "K through Gray," while re-investing in higher education (human capital)
2. Support capital formation through improvements in existing law as well as innovative strategies to expand participation in the asset class (investment capital)
3. Focus on tech development as an economic driver, with an emphasis on how platform technologies and emerging trends can propel targeted sectors (tech infrastructure)
4. Make it easier to be an entrepreneur in Wisconsin, from startup to scale-up (entrepreneurism)

Within those four broad categories, here are our major recommendations:

Human Capital

1. **Invest in the long-term economic value of higher education.** A succession of well-researched reports, state and national, have reinforced the economic value of post-high school education. This can take the form of a college degree or credentials in vocational and tech-based trades. Wisconsin needs doctors, nurses, engineers and teachers ... it also needs welders, electricians and transport drivers. The governor and Legislature should (1) foster talent development in strategic sectors of the Wisconsin economy; (2) improve the transfer of science, technology, engineering and math competency into a prosperous Wisconsin economy; (3) be aware of the competitive world around us, especially in terms of capital projects that help connect training, research and workforce development, and; (4) recognize that attracting and retaining workers will not be accomplished through a "silver-bullet" solution but tied to multiple factors over time.
2. **Develop talent through means-tested student aid.** Endorsed by some policymakers but under legal challenge in some venues, federal loan forgiveness may be an inefficient way to make post-high school education affordable. The same holds for tuition freezes, which can be overly general in terms of who

benefits. Means-tested student grants through the federal Pell Grant program and the Wisconsin Higher Educational Aids Board (“Wisconsin Grants”) better target those who most need the help. In the case of Wisconsin Grants, it helps keep homegrown students in Wisconsin. Annual appropriations for Wisconsin Grants should be raised to bring the state to Minnesota’s level for grant spending per undergraduate. (Minnesota is comparable in size to Wisconsin and a neighbor with a higher college graduate population.) As is currently the case, grants should be apportioned among students in the three sectors: 55 percent for UW students, 20 percent for technical college students and 25 percent for Wisconsin citizens attending a private, non-profit college in this state. This cost would be spread over multiple budget cycles and it would pay for itself over time through rising per capita incomes and tax collections associated with that revenue growth. *The Wisconsin Tuition Promise*, modeled after a successful UW-Madison program, is a new effort to close the gap for low-income students after Pell and Wisconsin Grants are awarded. Like the Pell and HEAB grants, the process would be based on student FAFSA (Free Application for Federal Student Aid) filings and calculations by admissions offices. The *Wisconsin Tuition Promise* is a “last dollar” program aimed at helping the neediest but otherwise qualified students.

3. **Initiate a program to keep out-of-state students in Wisconsin upon graduation.** According to a 2022 nationwide study by the Massachusetts High Technology Association, Wisconsin ranks 27th among the 50 states in the retention of in-state, college-educated adults in the workforce. That’s not nearly good enough, given other demographic pressures facing the state. Some states already have programs through which the out-of-state portion of a student’s tuition can be reimbursed if that student remains “in-state” for a designated period after graduating. Wisconsin should investigate that option for public and private colleges alike.
4. **Build talent through employer incentives.** Wisconsin employers, with the incentive of a state “Future Workers Tax Credit,” could better attract and train well-qualified workers. A “Future Workers Tax Credit” would give employers more incentives to invest early in education and training of individuals (future workers), empowering employers to determine the skills and abilities they most need. Such a credit could focus on critical occupations and low-income students while they are still in school. This could keep more students in Wisconsin to pursue careers.
5. **Support apprenticeships, internships and training.** Strategies include (1) supporting S.2227, the federal CHANCE in Tech Act, an acronym for Championing Apprenticeships for New Careers and Employees in Technology. It would award contracts to industry intermediaries to develop apprenticeships; (2) support tech internship programs that expose college students, especially undergraduates, to Wisconsin companies; and (3) support more funding of computer science courses in K-12 schools.
6. **Invest in UW System capital projects that lever talent, grants and industry support.** The Board of Regents has approved a capital budget plan that prioritizes science, tech, engineering, health training and other research buildings statewide. Such facilities attract non-Wisconsin companies, public and private

grants, other industry support and faculty/student talent. Equally important, modern facilities are necessary to train all students and bolster local economies and workforces. Two examples of highly ranked UW capital projects are the UW-College of Engineering Building and the UW-Eau Claire Health Sciences building. Process impediments are detailed in point 7.

7. **Lack of bonding ‘freedom’ adds costs and delays.** All UW System campuses lack the authority to issue bonds, which is borrowed money to pay for construction over time when there are demonstrated long-term benefits. In fact, the UW-Madison is the only public flagship university in the United States that lacks such authority, meaning even its most urgent projects are subject to an overall cap in state bonding dollars. State dollars are often augmented by private donors, but even a minimal amount of state funding holds hostage those private dollars to design and review processes that add time and costs in inflationary times. The start-to-finish time for new buildings is illustrated by projects such as the \$47-million Babcock Hall Dairy Plant and Center of Dairy Research addition. It won state budget approval in the mid-2010s, work began in the fall of 2018 and was not complete as of four years later – and not because the UW-Madison itself had delayed its progress. Projects such as the College of Engineering plan to replace a 1930s-vintage building have also been slowed, despite being a top campus priority and tied to a business sector need for engineering graduates. The competition among top research universities such as UW-Madison is intense, especially within the Big Ten Conference. The UW-Madison attracted about \$1.5 billion in research dollars in 2021, which kept it among the nation’s leaders. Without more freedom to chart its own course with capital projects, however, that standing may be threatened.
8. **Place, innovation and culture:** As our elected officials make decisions about policy proposals to propose or support, they should consider whether such proposals will help or hurt Wisconsin’s reputation as a welcoming, innovative, creative and dynamic place.

Investment capital

1. **Support a fund-of-funds based on a public/private partnership model.** Wisconsin should invest over six years in a fund (or funds) that levers public dollars by attracting private investment within the state and beyond. This should be designed in a way that does not compete with Wisconsin-based private funds, builds on existing efforts and improves the state’s inroads into larger capital markets. A \$75 million public-private fund was included in the Governor’s 2023-25 budget that would require a 2-to-1 private match. It is worth noting that Wisconsin has received funding through the U.S. Treasury Department for State Small Business Credit Initiative, of which \$50 million has been set aside for a Wisconsin Investment Fund that would include several federal requirements.
2. **Work with the State of Wisconsin Investment Board and other major institutional investors to increase the supply of venture capital.** The State of Wisconsin Investment Board is a large investor in the venture capital asset class, but predominantly in funds outside Wisconsin. Approximate figures indicate

SWIB invests about one-sixth of its venture allocation in Wisconsin funds and direct investments; the remainder is nationally and internationally. A generation ago, SWIB paved the way for Wisconsin's early venture industry with investments in homegrown funds. That tradition has been largely lost to time. Without turning to state legislation, SWIB should be asked to invest more in Wisconsin funds that demonstrate a strong return-on-investment. SWIB is a Wisconsin pension fund that largely benefits Wisconsin residents; it makes sense to invest more in-state where it does not harm overall fund management. To its credit, SWIB continues to make connections with outside capital sources. Other institutional investors and corporations with similar connections also do so. The Wisconsin Alumni Research Foundation is one successful example of increasing Wisconsin's visibility among out-of-state investors, investing in-state when it makes sense to do so, while maintaining its fiduciary responsibilities.

3. **Support diverse fund managers in Wisconsin.** Minority- and women-led funds and networks will enhance return on investment, based on the track records of such early stage investment funds nationally, while improving economic opportunity in more communities. A recent presentation by Generation Growth Capital co-founder Cory Nettles makes the point that funds led by diverse managers spot opportunities others may overlook. Should Wisconsin be successful in its SSBCI bid, it may help enhance such efforts and fit within a larger fund-of-funds structure.
4. **Update the Qualified New Business Law.** The QNBV law is an effective model for enhancing early stage investment. Enacted in 2005, it was originally intended to help "seed" very young companies. It was amended in 2022 to reflect the fact that, in order to grow, QNBV companies often need to expand into other states by acquiring similar firms or establishing sales offices to better capture national markets. In the spring 2022 session of the Legislature, the law was amended to allow for a one-year "grace period" for companies that fell below the 51% in-state employment requirement due to expansion in other states. That was welcome progress. Moving ahead, the Legislature and governor could consider an "either-or" standard that allows WEDC to consider a company's in-state employment growth rate, not just a 51% metric that could apply even if a company's job total is static or declining. If a company adds Wisconsin employees at a rate that is 50% higher than the prior year's growth in all Wisconsin private-sector jobs, its investors should be allowed to retain credits.
5. **Enhance state R&D tax credits.** Like 37 other states, Wisconsin provides an incentive for companies to expand their R&D investments in the state in the form of an annual R&D tax credit. This credit is only available to companies that increase in-state R&D investments over recent year expenditures. Despite incredible job growth associated with private sector R&D, the state's current cap on annual credits has caused awards to cover less than 30 percent of otherwise eligible applications. As a result, our credit may not remain competitive in comparison to other states. States such as Tennessee are moving to make such expenses fully deductible on corporate income taxes.

Tech infrastructure

1. **Accelerate investments and welcome emerging platforms in broadband development.** This is a two-part recommendation. Wisconsin should enhance development of 5G coverage in urban centers and accelerate high-speed broadband deployment in rural and underserved settings. It should be noted 5G is essential for connected and autonomous vehicles. This transition will require money as well as regulatory reform and adoption of different technologies where they make sense. The pandemic reinforced the importance of broadband to healthcare, education, Main Street business prosperity, emergency services and more, especially in rural Wisconsin. The state Public Service Commission has estimated Wisconsin could, over time, get \$1 billion in broadband help from the federal government. At present, however, Wisconsin is “middle-of-the-pack” for broadband penetration by some independent measures. The advocacy group Broadband Now ranked Wisconsin 27th among the 50 states in late 2021 based on terrestrial broadband access (89.6%); wired low-price plan access (84.4%); average speed test (277.1 Mbps); and number of internet providers (233). The American Society of Civil Engineers Wisconsin Section gave the state’s infrastructure a “C” grade in 2022. The Tech Council will engage with the PSC in 2023 as it pursues its goal of “Internet for all,” driven by a mix of technologies, within five years.

2. **Enhance access to clean power.** Wisconsin is already reducing its reliance on coal-based power generation, which is the biggest single contributor to man-made climate change worldwide. As Wisconsin is slowly weaned from coal, however, energy use is not likely to diminish – even with solid conservation strategies. More people using more devices and electric vehicles equates to higher energy use.
 - A. Wisconsin should welcome out-of-state power generated from alternative sources, such as solar and wind power, two ready sources.
 - B. Wisconsin is one of very few states that allow underground high-voltage direct current lines to be built in highway rights-of-way. It should consider that option whenever possible to gain access to more solar and wind power from the west... as well as within Wisconsin.
 - C. Wisconsin should also support the Nuclear Regulatory Commission’s review of an application to extend the life of the Point Beach Nuclear Plant, which remains a reliable source of emissions-free energy.
 - D. The state PSC should consider plans by Dairyland Power Cooperative to build a small-module nuclear reactor within 10 years. It should look at other such opportunities as they arise. In January 2023, the U.S. Nuclear Regulatory Commission certified the design for what will be the United States’ first small modular nuclear reactor in Oregon.
 - E. Wisconsin is also a research leader in nuclear fusion, hydrogen-based energy and battery storage. The Inflation Reduction Act added billions of dollars in federal support to all types of energy solutions. Some

initiatives are already under way and deserve support, such as the seven-state Midwest “H-2” project.

3. **Support Wisconsin efforts to engage in a more resilient economy.**

Wisconsin entities ranging from major corporations to academic research institutions are competing for “Regional Economic Engine” grants from the National Science Foundation. The Tech Council is a part of four Type 1 proposals submitted to NSF in late 2022. “Letters of collaboration” were submitted on behalf of:

- The Water Council and partners (Water technology and energy)
- WiSys and partners (sustainable agriculture)
- The UW-Milwaukee and partners (energy)
- The UW-Madison Center for Dairy Research and partners (renewable feedstocks and the bioeconomy)

A fifth Type 2 proposal involves quantum computing was submitted in January 2023. It involves the UW-Madison, with the coalition being led by a Chicago group that includes the University of Chicago.

4. **Embrace innovation in transportation.** With the rise in electric vehicles, both personal and in fleets, charging stations and infrastructure to accommodate EV and autonomous/connected vehicles are needed in Wisconsin. Electric vehicles will require an infrastructure that will use more electric power over time. Autonomous and connected vehicles will also require reliable 5G connections. Wisconsin has a unique advantage that can be exploited: It is one of very few states that allows, even encourages, underground power and communications lines on certain highway rights-of-way. Next generation highways in Wisconsin can be part of the solution for EV charging stations and vehicle communications.
5. **Support efforts to enhance Wisconsin’s computing capacity.** These include efforts to make computer science classes more available in K-12 and higher education, and not just to those students who are majoring in the subject. Computer education must move beyond the typical “Friday afternoon elective” in today’s K-12 curriculum and take on the weight of a full course. Computer science programs at the UW-Madison, the UW-Milwaukee, the Milwaukee School of Engineering, Marquette University, UW-Platteville and beyond have strong working relationships with Wisconsin industry. They are also much in demand. For example, the biggest single major at UW-Madison is computer science. There is a shortage of computer science teachers in K-12 education.
6. **Embrace a national solution to data privacy.** The United States was a leader in data privacy laws decades ago, but not enough is being done at the federal level today to prevent personal information from being misused. The European Union’s General Data Protection Regulation aims to harmonize privacy laws across the EU, but critics say it continues practices that have long stifled innovation in Europe. China’s data privacy protocol is even more far-reaching

and, some argue, even dangerous, given fears of cyber-snooping on U.S. tech companies. Congress should quickly adopt reasonable federal standards that would pre-empt 50 different state privacy laws. A state-based collection of laws could make a mess of interstate commerce while confusing consumers and putting young companies at a disadvantage.

7. **Examine steps that could attract hyperscale data centers.** Hyperscale data centers can be major business attractors. Every state surrounding Wisconsin has attracted at least one such center. All those states have sales and use tax exemptions on personal property for data centers, something not currently in place in Wisconsin. In fact, studies show the most important factor in attracting such centers is elimination of taxes on personal property (such as servers).

Entrepreneurism

1. **First, do no harm:** Avoid state-based research restrictions. Validate our level of regulation relative to other states to ensure we maintain an open and competitive innovation environment for entrepreneurs and businesses already in our state – as well as attracting entrepreneurs to Wisconsin. At a time when uncompromising policy positions can have direct economic effects, elected state officials should not stake out rigid solutions – right or left – that may discourage business founders, entrepreneurs, students and others from seeing Wisconsin as a great place to live and work. Wisconsin competes nationally for talent and dollars; let's not hurt our odds.
2. **Use Tech Council platforms and partners to deepen meaningful programming statewide and within ethnic communities.** Our staff is working on increased outreach to parts of rural Wisconsin that may have potential for entrepreneurial growth. Part of the plan is enhanced outreach to entrepreneurs and small tech businesses with minority founders and C-team members.
3. **Compare “fence-me-in” regulations in Wisconsin with those in other states.** Ensure that professional and occupational licensing isn't a “fence-me-in” strategy to exclude new entrants to the marketplace. External studies on licensing reform have been conducted by the Kauffman Foundation and the Badger Institute.
4. **Continue to use our existing metrics** and other studies to validate the importance of startups and scale-ups to the Wisconsin economy. This has been a recurring process since the Tech Council first issued “Vision 2020: A Model Wisconsin Economy” in late 2003.
5. **Create clear paths for foreign-born talent.** Many foreign entrepreneurs are interested in starting businesses in the United States and are unable to do so because of immigration laws. Unlike Canada, the United Kingdom and a dozen other nations, the United States does not have a visa program that supports business creation by foreign entrepreneurs. Most often, these are people who were educated at American colleges and universities and who would like to stay.
6. **Consider incentives for remote work in Wisconsin.** A recent study by the Tech Councils of North America concluded that tech worker migration is no longer just state to state, but country to country. How can Wisconsin position

itself to be a net “beneficiary” in this environment versus a net “donor?” The answer may require input from industry and state agencies that examine migration patterns and tax laws.

7. **Consider incentives to attract more experienced mentors.** The secret to success for many young companies is getting advice from people who have “been there, done that” in the past. State policymakers should consider a modest income-tax tax credit to further incentivize qualified and otherwise voluntary mentors.
8. **Build on the Tech Council’s I-Q Corridor brand** to attract companies and talent. The “I” stands for interstate, innovation, intellectual property and investment, with the “Q” representing quality of education, health, workforce, life and more. It is a way to project Wisconsin’s role in a larger region that spans from Chicagoland to Milwaukee, the Fox Cities, Madison, the Chippewa Valley and the Twin Cities. Wisconsin has proven it can promote its tourism and dairy industries; it should do the same to entice workers and investment.

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