



# A Path Must Be Chosen

Current state of the economy requires new approaches to be competitive

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Researcher Trevor Thornton displays a new generation of silicon for advanced communications. The innovation has led to the spinoff company SJT Micropower.

**O**ne of my favorite philosophers, Yogi Berra, may have said it best: "When you come to a fork in the road...take it."

I believe we are at a fork in the road in this nation — that we are in more trouble than we want to admit and are inclined to simply hope that things will get better than to make the tough choices to change the situation. But hope is neither a plan nor a formula for a better future. Actions must be taken. A door of opportunity must open to help spur serious commitment to making smart and strategic research investments to promote and continue economic growth. Science Foundation Arizona (SFAz) is one such catalyst of that opportunity in our state.

SFAz focuses on competence and performance with clearly articulated goals creating a foundation for economic stimulus and success by pursuing wise, long-term and strategic policies. The process in America today is more *ad hoc*, with decisions at the state and federal levels geared to finding quick fixes for the budget crisis of the moment. The federal actions in late 2008 seem merely an exaggerated symptom of a problem that has entrenched itself among American leadership.

Given the current policy climate, it is easy to forget that the United States has led the world in research and education for a long time. In the first decade of the 20<sup>th</sup> century, we had mandatory education through high school to support growth and cultivate the talent that industry needed. We had the GI Bill, we created the National Science Foundation, National Institutes of Health and many other strategic tools after World War II and pre-Sputnik. Yet, despite such successes — borne out of sound government policies — we have stood by while our educated technical workforce declines. This may require U.S. companies to move research and development and manufacturing offshore to find the talent needed.

Unfortunately, the same *ad hoc* approach to policy and strategic investment that seems to define federal actions is also evident in our states.

While national security remains a critical federal research and development responsibility, it may be time to encourage or create appropriate incentives so state governments can begin a serious focus on R&D to enable the needed knowledge-based component of our economy to enhance our economic security. A strategic R&D focus at the state level will create an economic competitive advantage for existing and new industries and ensure greater benefit from the federal R&D investments now in our universities.

The federal government has the prime responsibility for basic research and is the main beneficiary of its results. But in areas of sustainability, education, aerospace, biosciences and agriculture, some states — such as Texas, New York, Ohio, Pennsylvania and yes, Arizona — find it beneficial to invest state tax dollars in strategic areas of knowledge generation. In Arizona, for example, it is solar and wind energy, sustainable mining, personalized medicine, new materials and software related to our computer chip and aerospace sectors. Such investments, moreover, complement the National Institutes of Health, the National Science Foundation, NASA, the Department of Defense and other federal R&D investments in Arizona. Science Foundation Arizona links discovery and is creating advantages for Arizona.

The need for a more diverse economy in Arizona was central to the creation of Science Foundation Arizona. Arizona's business and key legislative leaders wanted to demonstrate value-add from a new model — a novel 501(c)(3) entity to ensure Arizona's ability to compete globally. Business leaders throughout the state are paying the operating costs, given the importance of SFAz to economic diversification.

What best practices can Science Foundation Arizona implement to help spur innovation and economic development? This list establishes the essential framework:

**+ Invest strategically in industry-university partnerships.** The foundation must pursue projects that will create a competitive advantage for the state.

- + Operate with speed and flexibility.** The pace of competition requires that the foundation work far more quickly and opportunistically for Arizona.
- + Shape new federal-state partnerships.** The impact of every dollar must be maximized, and the foundation stands at a special juncture between the two entities to catalyze innovation by bringing talent and resources from both together.
- + Be business friendly.** To be a truly collaborative force, the foundation must listen to business and help make Arizona the country's most technology-friendly state.
- + Focus on exceptional standards for K-12 education.** The foundation must keep dialogue and pressure on the fact that *proficient* is no longer sufficient; world-class must become the standard.

The days when the United States possessed a clear and present competitive advantage are over. Many of our global competitors have learned our old game and are now playing it better than we are. Perhaps current economic conditions create the kinds of pressures necessary to inspire new approaches, including state-level R&D entities that can operate as strategic arms of our national enterprise.

I am encouraged that the leadership of Arizona sees the 21<sup>st</sup> century as the "endless frontier." This vast landscape promises enormous opportunities for exploration and fresh design. But it will require bold experiments at every level if we are to expand our horizons and gain ground.

We are at a fork in the road, and we should take it. ■

William C. Harris is president and CEO of Science Foundation Arizona.

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