USTAR
Utah Science, Technology and Research Economic Development Initiative

WHY THE BUSINESS COMMUNITY SUPPORTS USTAR

Oct. 18, 2005

A joint statement by the Salt Lake Chamber of Commerce, the Utah Information Technology Association, the Utah Life Science Association, and the Economic Development Corporation of Utah

Introduction

In 1968, the process began to establish Utah's first research park and technology commercialization program at the University of Utah to tap the technological innovations of research laboratories, and to create viable products and businesses that would enrich the economy of the entire state. In 1986, Utah State University developed its Innovation Campus research park.

The return on investment from these two research parks has been enormous. But it could have been much different. When Fort Douglas closed in 1967, a committee evaluated 33 different requests for use of the land, then worth several million dollars, that is now Research Park. Instead of allowing the land to be developed as housing, traditional office space, or left as open space, far-sighted leaders decided to dedicate it to research and development. They created one of the first research parks in the nation. The 1969 session of the legislature set forth guidelines for development consistent with the research mission.

At the time, the state had few other engines of economic growth. But from 1968 to the early 1990s, Utah grew into a technology powerhouse with companies like Evans & Sutherland, ARUP, Myriad Genetics, Novell, WordPerfect and Iomega growing out of university research and contributing to the state's economy. Utah's investment and foresight in the late '60s, and later with USU's Innovation Campus, have been richly rewarded.

Here are the results:

At the University of Utah, 60 companies have been developed through the research park; 44 are currently housed at the park, with 37 academic departments and approximately 6,300 employees in 35 buildings. These "park" companies have added more than 4,700 jobs to the state's economy, and the annual in-state economic contribution of park businesses exceeds $600 million.

At Utah State University, nearly 60 companies have had their beginnings in USU research and Innovation Campus. These companies generate more than $430 million in taxable revenues for local and state entities, employ over 2,000 people, and help bring high-tech infrastructure to some of the more rural areas of the state. Examples of companies started by USU faculty and students include Hyclone laboratories, Campbell Scientific, and Wescor.

Current data from leading policy think tanks and governmental sources suggest, however, that despite Utah's early and substantial successes, the state is in danger of falling behind in developing high-tech businesses. Utah's technology employment has dropped from a high of 67,000 jobs in 2000 to 56,000 in 2004. This has meant fewer opportunities for Utah's many young people, including graduates of top professional programs, to pursue careers for which they prepared in college and limited promotion opportunities because the state has few corporate headquarters.

In addition, as Utah's tech employment has dropped, average Utah salary levels have also dropped, from a high of 96% of the U.S. average in 1981 to only 82% in 2004.

Utah's ability to compete in the knowledge economy thus far is attributable to the foresight of those who cultivated the nascent businesses and industries at the research universities and promoted their development and commercialization in the private sector. Utah's business community applauds the community and legislative leaders who have promoted, supported, and passed the enabling legislation allowing this to occur.

Today, Utah's two research universities bring $1.2 billion in new revenue to Utah from outside the state. This outside funding has created employment for 37,198 people and generated $97 million in state tax revenues, $17 million in local tax revenues, and $2 billion in sales. State appropriations to Utah's two research universities have produced a 6-to-1 return on the state's investment.

Utah is at a crucial crossroad today and must take action if it is to maintain and improve its position in the high-tech economy, and if research is to continue as a major economic engine for the state, creating jobs, businesses and tax dollars that will enrich the entire state.

The race is on all over the country and the world to develop the new businesses and industries of the Knowledge Age. Thirty-two states are now investing large amounts in university research for economic development. A nationwide survey running from 2000 to 2005 showed total state appropriations for high-tech academic research at $29.5 billion, including funds for buildings, university research and high-tech economic development.

Without decisive action we risk failing to keep pace with surrounding states and the rapidly-expanding Asian economies, and we may lose opportunities to generate economic activity in leading-edge industries. The state must establish an aggressive and visionary plan to move forward.

The USTAR Initiative

During the 2005 legislative session, the Salt Lake Chamber, the Economic Development Corporation of Utah, the Utah Life Science Association and the Utah Information Technology Association supported SB192, High Technology Economic Development Appropriation, which became the USTAR (Utah Science, Technology and Research) initiative. This legislation requested funding for economic development and research activities at our research universities so that Utah would not fall any further behind other states, or forgo significant economic development opportunities.

The Legislature passed SB192 with $7.35 million in initial funding to pay for equipment, to hire research teams at the University of Utah and Utah State University, to plan for further investments, and to measure and quantify the economic impact of the investment.

USTAR is Part of Broader Economic Plan

In the context of Governor Huntsman's broader economic development efforts, USTAR has great promise. Utah's business community supports the governor's comprehensive, balanced economic development package and the framework it establishes for Utah's future. The program has the power to revitalize Utah's economy and place the state on a long-term upward trajectory.

Governor Huntsman understands that government does not create jobs, but it can help create an

environment in which the economy can flourish. The Huntsman plan focuses on the fundamentals of tax and regulatory reform and infrastructure development, to ensure that businesses can produce goods and services without unnecessary constraints that can be delivered without delay.

The specific initiatives in the Huntsman plan include:
1. **Talent**. Develop talent/productive workforce through an effective K-16 system
2. **Public Sector**. Government laws, regulations and incentives that are business-friendly
3. **Research Universities**. Invest in and support research endeavors at Utah's two research universities to accelerate the discovery of new technologies and business opportunities
4. **Technology Commercialization**. Bring innovations and discoveries to market through Centers of Excellence and Technology Outreach Centers
5. **Industry**. Develop Utah's business clusters around industries in which the state currently has a competitive advantage, and new industries we want to develop. Form new companies, support existing companies, and recruit companies
6. **Capital**. Create seed funding to make capital available to promising companies
7. **Energy**. Align Utah's energy policy
8. **Mobility**. Strengthen transportation system to avoid congestion, both intra-state and inter-state

All of these initiatives fit together and each is crucial to creating an economic development machine to compete successfully with other states and countries. While many demands exist for state funds, the business community believes Utah can avoid competition for the same funding among the different components of the Huntsman economic development plan. A healthy economy will generate additional revenues to expand the economic pie.

Business leaders agree with Dr. Dinesh Patel's position that the five components required to sustain long-term economic development are:

1) Research universities that promote research and development and technology commercialization
2) Local business successes
3) Human capital, and
4) Venture capital
5) Progressive government support

These five components are crucial and can mean the success or failure of the state's economic development plan.

Research Commercialization is USTAR Focus

The first component, university research and the creation and spin-off of new businesses and industries, is the focus of the USTAR initiative. USTAR is an economic development initiative, not a higher education initiative. As a key piece of the economic development puzzle, it must not be lost or minimized among the many initiatives being advanced.

Conducting basic scientific research and development leading to technology commercialization will mean greater strength for the state's economy. Utah is fortunate to have two high-caliber research universities that have been part of the state's economic development fabric. As stated, both the University of Utah and Utah State University have nurtured the development of technologies that have been commercialized and transferred to the private sector for the benefit of the entire state.

USTAR funding will be strategically targeted to high-potential research projects where Utah already has

distinct competitive advantages and where the possibility is high to create numerous new businesses and thousands of new jobs. This means that funding will not be spread around "politically" to various university departments or used for projects that are being replicated elsewhere.

Instead, Utah's funding will be targeted at disciplines that have the potential to generate enterprises that will grow and stay in Utah, create numerous jobs, and build to a critical mass that will result in formation of business "campus" environments comprised of related enterprises that feed off one another.

For example, researchers at the University of Utah have the unique and substantial opportunity to develop the whole area of genomics tied to genealogical databases. Utah is already a leader in this field, featuring both university research and substantial progress in the private sector. Genomics is a broad field with many opportunities to develop effective treatments for a variety of diseases. It is a multi-billion dollar international market. There are numerous lines of research to explore and many potential business spin-offs in the areas of neuroscience, biomedical, defense and security, information and imaging technology, microbial technology, and advanced systems and materials engineering. Most importantly, no place in the world is positioned as well as Utah to exploit the rich potential of this general scientific discipline.

One key strategic research area related to genomics has to do with homeland security, specifically bioterrorism research around biosensors, information technology, microbiology and infectious disease. Utah State University and the University of Utah host advanced programs in these areas, which is well-suited to Utah because of strategic partnering opportunities with Dugway Proving Ground and military projects around Tooele. Large research institutions like Battelle Science and Technology International are already involved in Utah and multi-millions of research dollars will be spent in this arena. Potential exists not only for military and homeland defense applications, but for numerous private company spin-offs that will develop products and services in the medical and pharmaceutical industries.

Richard Florida, in his book "The Rise of the Creative Class" said:

> "The presence of a major research university is a basic infrastructure component of the creative economy. It is more important than the canals, railroads, and freeway systems of past epochs, and a huge potential source of competitive advantage."

Closer to home, Kelly Matthews, economist for Wells Fargo Bank and the economic advisor to the Economic Development Corporation of Utah, said:

> "There is little doubt that the state's future economic growth will be determined by our brains rather than our brawn and by the quality of our classrooms rather than the richness of our natural resources."

Utah's other colleges and universities must be also involved in this process, not as research universities, but as sites for technology innovation centers, business incubators, and training. Engaging other universities and colleges by locating innovation centers on their campuses will allow them to better support local businesses. Their involvement will bridge their faculties' expertise to serve the needs of local businesses and entrepreneurs in developing and launching new products. It will also stimulate economic development in their communities, ensuring that the products of research at the University of Utah and Utah State do, in fact, positively impact businesses throughout the state.

Utah must make a significant investment in research and development to keep the state's economy vibrant or fall behind competitors like Arizona, Colorado, California, Kansas, Maryland and other states that are investing huge sums to pursue economic research at their local universities. In the global economy, we also compete directly with other nations engaged in basic research.

Charlene Barshefsky, former U.S. Trade Representative and scholar at the Progressive Policy Institute, in a Sept. 15, 2005, Wall Street Journal column entitled "Revolutionary China, Complacent America" said that America must invest more in research and innovation or risk falling behind China and other aggressive Asian economies. "Both the government and the private sector should increase investment in research, particularly in the physical and information sciences," she said. "Government investment in basic science has remained stagnant in real terms for three decades, and has dropped 37% since the '70s relative to GDP."

Business leaders in competing states and countries understand the value of research and development and its direct link to economic growth and high-paying jobs. In Utah, the business community is very concerned about Utah's economic future. We support public and private funding of research and encourage adequate funding of USTAR by the legislature. Without world-class research facilities, the best research projects and the nation's best scientists will go elsewhere. The billions of dollars in grants will go elsewhere. Successful companies and new industries will go elsewhere. Sadly, Utah's children will have to go elsewhere to find high-paying jobs.

With an economy currently producing robust revenue surpluses, Utah is in a strong position to take action now to ensure that Utah does not fall behind or forgo significant economic development opportunities.

Conservative projections developed by the Bureau of Economic and Business Research suggest that over a 30-year period, the USTAR investment could yield $4.9 billion in new external research funds, 422 new companies, 123,406 new jobs paying $62 billion (cumulative) in salaries, and $5 billion in new tax revenues for Utah. This is real economic development that will have tremendous impact throughout Utah.

It is important to emphasize that the USTAR initiative is focused on jobs and a strengthened economy, not on more money for higher education. It is a business-oriented strategy that will create new jobs, new industries, products and services that will have a ripple effect throughout the economy. Business leaders embrace and support this initiative for the long-term well-being of our state, our economy, and our children.

Funding should not come through, or compete with, education appropriations. It is imperative that the legislature act quickly to take Utah's homegrown, high-tech research and development to the next level. The potential benefits to Utah's economy far outweigh the risks of the project.

With competition for grants, research dollars and good research projects increasing among research universities throughout the country, Utah is in danger of falling behind. We cannot let that happen. Surrounding states have committed and re-committed significant resources to research and development and technology commercialization and transfer to accelerate economic development. They recognize the importance of developing cutting-edge technologies for the businesses and industries of the future.

Governance and Accountability

USTAR should be an independent but integral part of the state's overall economic development plan. USTAR already has momentum and strong support, as demonstrated in the 2005 legislative session. Since then, significant work has been done in three areas to strengthen the initiative: (1) Governance and oversight have been strengthened to ensure that state USTAR funds will be used for the purposes for which they were appropriated and achieve the economic development goals outlined; (2) The Technology Innovation Center part of the initiative has been updated to ensure statewide benefit from research and new technologies; and (3) The total amount of state dollars needed to implement the USTAR initiative has been carefully reviewed and the possibility of obtaining private sector investment to share the risk has

been explored.

1. Governance/Oversight

To provide oversight for the USTAR initiative to avoid duplication with the state's other economic development efforts, an oversight board should be created with the following duties: (1) Directing expenditure of USTAR funds and ensuring that state funding is used as directed by the governor and the legislature; (2) Accepting private money and grants to support research at the research universities; (3) Reviewing and assessing USTAR research programs and their impact on the economic prosperity of the state; (4) Verifying that research grants are coming in as planned and that the initiative is meeting agreed-upon economic development objectives; and, (5) Providing the governor and the legislature with an annual report measuring results against expectations occurring under the USTAR initiative.

The board could be comprised of members appointed by the governor the Senate president and the House speaker, with private sector representation. It could include a representative from Utah State University and a representative from the University of Utah. A separate advisory committee will be created to ensure broad-based participation and input, with membership including representation from the Economic Development Corporation of Utah, Chambers of Commerce around the state, the Utah Information Technology Association, and the Utah Life Sciences Association.

In addition to controlling the distribution of funds, the oversight board could be charged with other responsibilities to enhance the USTAR project, including: determining ways to coordinate and improve transfer of technology to the private sector; increasing state funding for academic research; helping state researchers to compete for large federal grants; soliciting gifts and investments from the private sector; and, creating alternative financing vehicles to build more laboratory space at the state's research universities

2. Technology Innovation Centers

Considering the overall state economic development plan, the Technology Innovation Centers could be combined with the business centers in the Huntsman economic development plan. Combining the initiatives would help prevent them from competing for funding and would reduce the confusion between the roles of the Technology Innovation Centers and the business centers. It could also mitigate some of the politics in choosing sites for these centers and reduce capital requirements. In addition to helping entrepreneurs test and develop new ideas and technologies, the centers could aid in the development and support of business generally. Instead of three technology centers, however, there would be five strategically located around the state. The cost of creating these centers is proposed at $3 million in the 2005 proposal, which is much less than the suggested funding in the 2004 proposal.

3. Amount of State Funding Needed

To keep the USTAR project moving forward and to keep Utah competitive, 2006 funding needs are as follows:

a) On-going funding for the Technology Innovation Business Centers: $3 million annually
b) On-going funding for research teams, equipment, and overhead.: $25 million annually*
*(In the 2005 session, the Legislature allocated $4 million in on-going funds for research, so this would be an increase of $21 million annually. This amount would be matched by the universities through private donations, license fees, other revenue, and grants.)
c) On-going funding for the commercialization of new technology: $3 million annually
Total on-going funding: $31 million annually
d) One-time funding for a research/lab facility at the U of U: $100 million*
*(The total cost of the building is estimated at $125 million, with $25 million coming from private

sources.)
E) One-time funding for a research/lab facility at the USU: $75 million
Total one-time funding for facilities: $175 million

4. Private Financing Possibilities
We recognize that state legislators must keep in mind all of the state's many priorities, including education, transportation and every other area receiving tax dollars. We understand the difficulty of appropriating hundreds of millions of dollars for this initiative in the next session.

Having done some preliminary research, we believe that innovative ways exist to supplement the state's investment with private investment.

Some of the possibilities include:

- State Building Ownership Authority
  - Use lease revenue bonds, which are not a general obligation of the state, and are not subject to state debt limit. Debt rating agencies have given Utah lease revenue bonds very high ratings. The Building Ownership Authority has plenty of debt-incurring capacity (over $1.6 billion), far in excess of USTAR's needs.
- Certificates of Participation
  - Private investors participate in the economic benefits. Create a 501(c)3 entity to oversee.
- Bondholder Tax Credits
  - Investors receive tax credits on the INCREASED taxes generated by USTAR
- Community Re-investment Act
  - Financial institutions invest a portion of their CRA obligation against tax credits or economic benefits. The industrial loan banks, for example, have enormous capacity in their CRA obligations. One, alone, has a $450 million obligation for CRA donations, investments and loans, but does only about $15 million in Utah.

Conclusion

To compete successfully for high-end development with other states and countries, Utah's limited resources must be concentrated and unified. The USTAR strategy as part of the Huntsman economic development plan will focus the state's economic development efforts on areas where Utah has competitive advantages. Research dollars can be directed to develop targeted technologies, products, businesses, and industries.

Implementation of the USTAR initiative will stimulate economic development in our state, and throughout our communities. It will help the state's rural regions grow. It is a state investment in our economic future. Utah needs to compete globally, and USTAR will help that to happen.