



UTAH SCIENCE TECHNOLOGY AND RESEARCH INITIATIVE (USTAR)

BUSINESS, ECONOMIC DEVELOPMENT AND REVENUE APPROPRIATIONS SUBCOMMITTEE
STAFF: THOMAS YOUNG

BUDGET BRIEF

SUMMARY

During the 2005 General Session, the Legislature allocated funding to the University of Utah and Utah State University to recruit and hire research teams, purchase equipment, and develop and implement a technology based economic development initiative. During the 2006 General Session, the Utah Science Technology and Research Initiative (USTAR) was formally created with passage of S.B. 75.

The USTAR program has three major components: construction of research buildings, recruiting and hiring of top-notch research teams in fields where Utah has a competitive advantage and operation of a technology outreach program at four locations throughout Utah. The USTAR research teams are bringing new funding to the state through federal and commercial contracts and grants for the development of new technologies.

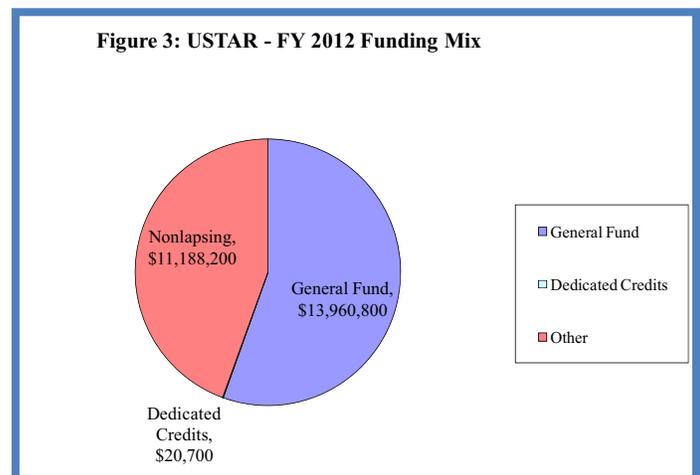
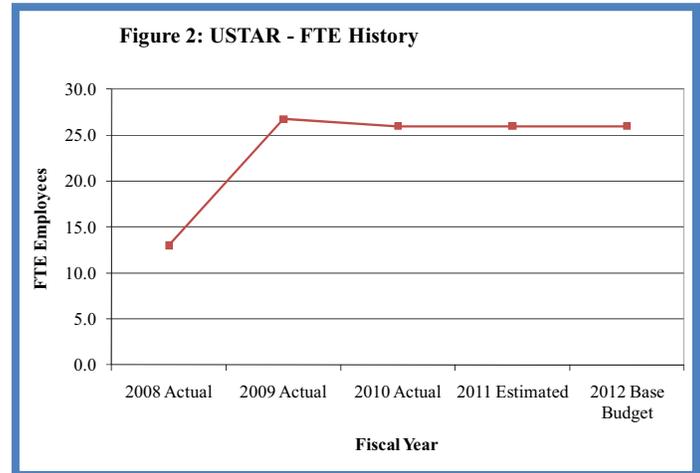
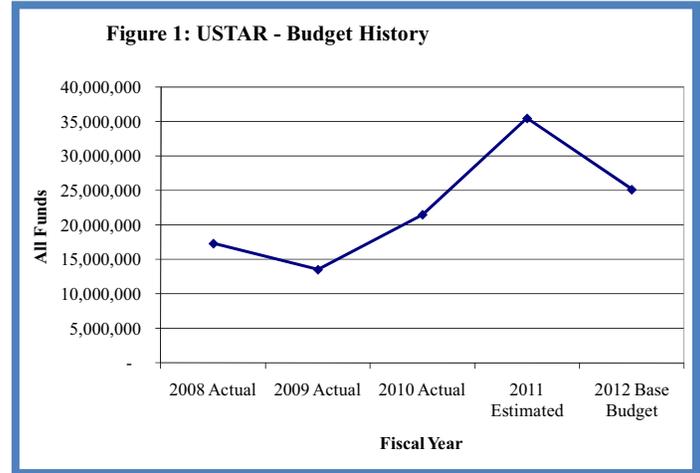
ISSUES AND RECOMMENDATIONS

Technology Outreach

The Technology Outreach program is operating on a structural deficit. In FY 2012 expenditures are expected to amount to \$1,949,000, which is \$829,000 above ongoing funding.

Research Teams

Performance by the research teams has been uneven. The University of Utah has received 60% of total funding and Utah State has received 40% of total funding. To date, the University of Utah has received about 88% of total grants and Utah State has received about 12% of total grants. Based upon four years of performance, the Subcommittee may want to consider altering the 60/40 funding mix.



Budget Adjustments

USTAR is requesting authority to increase the Search Fee from \$50 to \$75, the Editing Fee from \$400 to \$500, the Writing Fee from \$600 to \$750, the Writing through Submission Fee – 1st Proposal from \$750 to \$1,000, and the Writing through Submission Fee – 2nd Proposal from \$2,000 to \$3,000.

PERFORMANCE INDICATORS

Administration & Research Teams

External research grants awarded, patents filed, and researcher employment are the three performance metrics by which USTAR Administration and Research teams measure success. The cumulative results four years into the initiative are shown.

Grants Awarded in Each Fiscal Year					
Description	FY07	FY08	FY09	FY10	Anticipated Awards
External Reserch Grants	\$487,082	\$2,126,631	\$17,657,454	\$24,072,189	\$19,173,876
Patents filed	0	0	8	29	
Researchers ¹	3	12	25	34	
FTE ²	29	65	128	185	

Grants Awarded: This is the funded portion of grants won through FY2010. See example below.
Anticipated Awards: This is the unfunded portion of grants won through FY2010. See example below.
Example 1: NIH awards \$100k over five years but only fully commits the funds as a yearly award of \$20K per year from FY09 to FY13.
 Grants Awarded is \$40k (FY09&FY10). Anticipated Awards is \$60k (FY11, FY12, and FY13).
Example 2: In FY10 a sponsor awards \$500k for a five year project (FY10-FY14) and fully commits the funds as an award in the first year.
 Grants Awarded is \$500k (FY10) and Anticipated Awards is \$0.
¹ Number of researchers at the end of each fiscal year.
² Number of university FTE funded through the USTAR initiative from State funding and other sources

Technology Outreach

In FY 2010, regional initiatives included awarding 68 individuals or groups start-up funds; of the 68 individuals or groups, 21 technology commercialization grant (TCG) awardees filed 21 patent or disclosure applications, created 15 prototypes, signed five sales distribution agreements, and assisted TCG awardees in closing \$2,060,000 in outside capital. The Technology Outreach program also included helping 75 clients at its SBIR center and assisted 19 clients with grant submissions, resulting in SBIR “wins” totaling about \$280,000 in grant funding.

BUDGET DETAIL

The USTAR line item comprises expenditures in the Administration, Technology Outreach, and University Researchers programs. Of the \$25,169,700 expected expenditures for FY 2012, \$22,430,600 (\$12,167,100 General Fund Base Budget) is directed towards support of researchers at the University of Utah and Utah State University; \$790,100 is for Administration; and \$1,949,000 is for Technology Outreach.

The Business, Economic Development, and Labor Appropriations Subcommittee adopted FY 2012 General and Education Fund budgets that eliminate the structural deficit. In making the budget adjustments, the Subcommittee recommended adjusting the USTAR ongoing base budget by 3.7%.

The USTAR initiative also comprises expenditures for construction of two research buildings at the University of Utah and Utah State. As of November 2010, about \$78 million had been spent on the University of Utah building and \$54 million on the Utah State structure.

USTAR						
Sources of Finance	FY 2010 Actual	FY 2011 Appropriated	Changes	FY 2011 Revised	Changes	FY 2012* Base Budget
General Fund	15,296,100	14,501,300	0	14,501,300	(540,500)	13,960,800
General Fund, One-time	(5,072,900)	0	0	0	0	0
Federal Funds	0	0	100,000	100,000	(100,000)	0
American Recovery and Reinvestment Act	15,884,400	18,000,000	(884,300)	17,115,700	(17,115,700)	0
Dedicated Credits Revenue	9,600	34,100	(19,100)	15,000	5,700	20,700
Beginning Nonlapsing	12,165,000	20,350,700	(3,605,800)	16,744,900	(3,778,900)	12,966,000
Closing Nonlapsing	(16,744,900)	(8,860,200)	(4,105,800)	(12,966,000)	11,188,200	(1,777,800)
Total	\$21,537,300	\$44,025,900	(\$8,515,000)	\$35,510,900	(\$10,341,200)	\$25,169,700
Programs						
Administration	899,600	671,600	161,200	832,800	(42,700)	790,100
Research Teams	18,636,300	42,198,100	(10,933,500)	31,264,600	(8,834,000)	22,430,600
Technology Outreach	2,001,400	1,156,200	2,257,300	3,413,500	(1,464,500)	1,949,000
Total	\$21,537,300	\$44,025,900	(\$8,515,000)	\$35,510,900	(\$10,341,200)	\$25,169,700
Categories of Expenditure						
Personnel Services	1,587,800	825,700	1,018,600	1,844,300	(128,600)	1,715,700
In-state Travel	22,100	14,500	10,100	24,600	(2,100)	22,500
Out-of-state Travel	19,900	9,800	12,000	21,800	(4,400)	17,400
Current Expense	769,400	759,200	55,600	814,800	(13,000)	801,800
DP Current Expense	132,400	125,700	(51,500)	74,200	(18,100)	56,100
Other Charges/Pass Thru	19,005,700	42,291,000	(9,559,800)	32,731,200	(10,175,000)	22,556,200
Total	\$21,537,300	\$44,025,900	(\$8,515,000)	\$35,510,900	(\$10,341,200)	\$25,169,700
Other Data						
Budgeted FTE	26.0	26.0	0.0	26.0	0.0	26.0
Actual FTE	22.6	0.0	0.0	0.0	0.0	0.0

*Does not include amounts in excess of subcommittee's state fund allocation that may be recommended by the Fiscal Analyst.

The following two tables present project descriptions and expenditure expectations for the teams at the University of Utah and Utah State University. As is shown, USTAR has total historical and expected expenditures for teams still in existence of \$66,248,533 to researchers at the University of Utah and \$40,527,530 at Utah State University. At the end of FY 2011, the research teams at the two universities expect to have \$12,041,300 in nonlapsing balances carried into FY 2012. The projects range from brain research to carbon sequestration and address a wide range of possible markets. Some research may turn into profitable investments, whereas other areas may not turn out to be worth the investment risk.

University of Utah USTAR Project Description and Total Commitment

Research Area	Project Description	Total Commitment through FY 2012	Federal Research Grants to Utah (through FY 2010)*
Biomedical Device Innovation	Develop implants to predict the onset of epileptic seizures in an attempt to prevent seizures by sending electrical signals in the brain; develop polymers to target toxic therapies in cancer cells	\$4,632,250	\$9,096,862
Circuits of the Brain	Veteran mental health; genetic cognitive disorders such as Down Syndrome and Williams Syndrome	\$5,632,396	\$1,187,735
Diagnostic Imaging	Computer modeling for early detection of Alzheimer's, Autism, Multiple Sclerosis, depression, and schizophrenia	\$5,345,719	\$11,575,477
Fossil Energy	Reduce greenhouse gas in the atmosphere by sequestering carbon dioxide in underground geological formations	\$4,757,532	\$18,996,766
Imaging Technology	Study brain development in children to detect pathologies earlier in a person's life; improve interpretation of the large data generated by MRI scans	\$5,296,568	\$2,198,301
Wireless Nanosystems	Develop technologies that use small devices capable of communicating wirelessly; applications range from biology to imaging	\$7,479,278	\$5,902,526
Nanotechnology Biosensors	Small biosensors to detect pancreatic cancer and other diseases	\$5,708,624	\$6,779,894
Personalized Medicine	Information based medical technology to increase the efficiency of treatment, minimize side effects, and improve cost efficiency	\$1,819,510	\$0
Nanoscale & Biomedical Photonic	Nano scale medical imaging	\$4,440,549	\$0
Digital Media	Animation; information technology	\$995,799	\$0
Micro & Nano System Integration	Improve interface of micro and nano systems and devices with their macroscopic correspondents	\$3,649,025	\$112,411
Cell Therapy	Regenerative cell therapy	\$1,493,563	\$0
7Tesla	High resolution MRI device	\$2,312,000	\$0
Alternative Energy Center	Develop catalysis and solar energy technologies	\$588,953	\$0
Bio Lab	Biomedical device prototyping lab to accelerate commercialization of new technology and market them profitably	\$500,000	\$0
Startup space	Rent and startup expenses	\$11,596,767	\$0
Total		\$66,248,533	\$55,849,972

*Not all of the grants are spent in Utah

Utah State USTAR Project Description and Total Commitment			
Research Area	Project Description	Total Commitment through <i>FY 2012</i>	Federal Research Grants to Utah (through <i>FY 2010</i>)*
Center for Advanced Nutrition (CAN)	Cholesterol; tailoring of individual diets to reduce obesity, heart disease, and other health problems	\$6,224,395	\$1,383,324
Energy Lab (Biofuels)	Possible use of oil-rich algae for use in alternative fuels	\$6,050,833	\$2,324,832
CASI (Directed Sensors)	Radar-like, laser-based lidar technology to measure distances instead of with radio waves; possible applications include wind farms, emissions control, replacement of bridges, and other infrastructure	\$9,278,877	\$3,959,204
Plasma Containment	Investigate neutron generation via a Tokamak device for energy; homeland security and other applications	\$457,960	\$0
Synthetic Bio-Manufacturing Center	Use of chemical makeup present in single cell organisms to transform raw materials into environmentally friendly products, such as low cost bioplastics, biodiesel, light energy, and pharmaceuticals	\$4,822,047	\$0
Space Weather	Weather forecasting	\$2,705,314	\$0
Interactive Design/Instructional Tech/Media	Emergency response computer simulation	\$327,819	\$0
Veterinary Diagnostics and Infectious Disease	Veterinary diagnostic tests	\$2,712,608	\$0
Intuitive Buildings	Electrical lighting is the largest consumer of energy in commercial buildings (35%); possible success would be cutting electrical use through anticipatory and task-adaptive lighting systems	\$2,245,899	\$0
Energy Dynamics Lab	Renewable energy for government and commercial customers	\$499,999	\$0
New Energy Initiative	Energy program at the BEERC building in Vernal	\$2,500,000	\$0
New CAN Hire	Accelerating research of the CAN team	\$600,000	\$0
New Commercialization Program	Accelerating USU IP to commercialization	\$300,000	\$0
USTAR O&M	Operations and maintenance	\$1,801,779	\$0
Total		\$40,527,530	\$7,667,360
*Not all of the grants are spent in Utah			