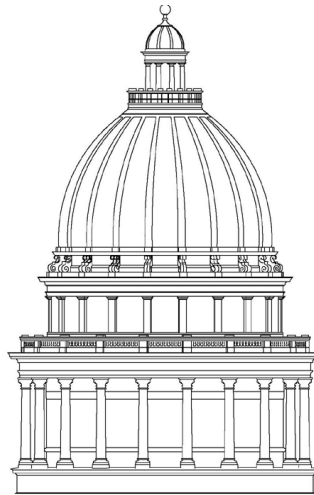


REPORT TO THE  
**UTAH LEGISLATURE**

Number 2013-12



**A Performance Audit of the  
Utah Science Technology and  
Research Initiative (USTAR)**

October 2013

Office of the  
LEGISLATIVE AUDITOR GENERAL  
State of Utah





STATE OF UTAH

# Office of the Legislative Auditor General

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AUDITOR GENERAL

October 15, 2013

TO: THE UTAH STATE LEGISLATURE

Transmitted herewith is our report, **A Performance Audit of the Utah Science Technology and Research Initiative (USTAR)** (Report #2013-12). A digest is found on the blue page located at the front of the report. The audit scope and objectives are explained at the close of the Introduction.

We will be happy to meet with appropriate legislative committees, individual legislators, and other state officials to discuss any item contained in the report in order to facilitate the implementation of the recommendations.

Sincerely,

John M. Schaff, CIA  
Auditor General

JMS/lm



# Digest of A Performance Audit of the Utah Science Technology and Research Initiative (USTAR)

The Utah Science Technology and Research Initiative (USTAR) is a long-term state-funded investment in Utah's knowledge economy. In March 2006, the State Legislature passed Senate Bill 75 creating USTAR. This measure provided funding for strategic investments to research teams at the University of Utah and Utah State University, facilities at these two research institutions, and a technology outreach program that is distributed strategically at up to five locations throughout Utah. The mission of the USTAR initiative is twofold. First, the initiative should enhance economic development in the state. Second, the initiative should leverage state dollars to enhance Utah's research universities through investment in research teams and buildings, resulting in the commercialization of innovative technologies.

**USTAR's Reported Revenues and Jobs Are Overstated and Inaccurate.** USTAR's reported revenues were overstated and inaccurate because dollars presented were unrealized, invalid, and overreported. USTAR's reported jobs were inaccurate because they included jobs that no longer exist, were based on projections instead of actuals, and included duplicate counts. Because USTAR administrators were unable to provide documentation to validate the numbers that they used to calculate their reported jobs number, we conducted interviews with individuals associated with the USTAR program and performed audit tests to review the accuracy of the information provided. These interviews and tests raised a number of concerns.

**USTAR's Reported Return on Investment (ROI) was Flawed and Commercialization Success Has Been Limited.** USTAR's reported ROI was flawed because it did not reflect an actual ROI, which is an expansion of the state's tax base driven by growth or formation of companies with associated new high-quality jobs. We also found that USTAR's reported commercialization revenues has been limited. In addition to these concerns, we found that

## Chapter I: Introduction

## Chapter II: USTAR's Reported Return on Investment Is Inaccurate and Flawed

### **Chapter III: USTAR Should Improve Oversight of Research Team Funding**

expectations for reporting outcomes were unclear and a mechanism for validating self-reported numbers has not been instituted.

**USTAR Should Clarify Expectations for Research Team Funding.** USTAR has not clearly established how performance of research teams should be evaluated as either successful or unsuccessful. Additionally, USTAR has not established an adequate system to identify and report commercialization revenue. USTAR should address these concerns by:

- Requiring routine reporting of clearly defined research team metrics and creating performance standards when possible
- Enforcing reporting rules and clarifying the definition of a USTAR project to ensure commercialization revenue is appropriately shared

**USTAR Should Ensure Budgetary Practices Provide Adequate Oversight of Research Funds.** USTAR should also ensure that its budgetary practices provide adequate oversight of research team funds by following budget approval and funding allocation rules, clarifying its financial commitments to research teams, and ensuring that the uses of research team monies for purposes other than researcher activities are appropriate and receive prior approval.

### **Chapter IV: USTAR Management Has Not Sufficiently Overseen Research Buildings**

**Improved Oversight of Research Buildings Is Needed.** We reviewed USTAR's implementation of its statutory mandate to construct research facilities at the University of Utah (U of U) and Utah State University (USU). We found that USTAR:

- Did not implement lease agreements with university officials before research faculty took up occupancy. To date, lease agreements have still not been executed, even though USTAR's USU and U of U facilities were put into service in September 2010 and April 2012, respectively.
- Has not clarified responsibility for the operations and maintenance (O&M) costs of its facilities. This omission has resulted in the use of USTAR's research team funds to cover the majority of O&M expenses. This also resulted in

inconsistent contribution levels from the U of U and USU toward USTAR buildings' O&M costs.

- Failed to budget for sales tax requirements associated with the construction costs of its research facilities. This error has delayed completion and operation of the nanofabrication laboratory at USTAR's U of U facility.

**Improved Guidance for Outreach Regions Is Needed.** USTAR management can improve guidance to the outreach program by improving contracts, ensuring contracts are up-to-date, and developing administrative rules or policies for the Governing Authority (GA) to approve.

**USTAR Should Ensure Outreach Is Consistent with Legislative Intent.** USTAR's outreach program may be in violation of legislative intent in that they exceed statutory limitations on locations and fund programs that statute is silent on. Therefore, the GA should work to ensure currently funded programs are in compliance with legislative intent.

**Management Should Develop Policies and Procedures for Approval by Governing Authority.** USTAR management should develop policies and procedures to direct operations and these policies and procedures should be formally approved by the GA. The GA is the body charged with overseeing USTAR. We found USTAR lacks operating policies and procedures for a number of primary functions of the program. We also found USTAR management has developed some policies and procedures regarding internal accounting, but has failed to have the GA review and approve them. Finally, we believe that the USTAR GA should consider adopting a conflicts of interest policy.

**Management Needs to Ensure Compliance with Statutory Requirements Regarding the Appointment of the GA Chair.** We found that the appointment of the USTAR GA chair has not occurred in compliance with statute. *Utah Code* 63M-2-301(4)(a) reads that, "the governor shall select the chair of the governing authority to serve a one-year term." The chair of the GA has served in this position since the inception of USTAR. While the chair has been a devoted member

## Chapter V: USTAR's Management of Outreach Can Improve

## Chapter VI: USTAR Administration and Governance Of Operations Needs to Improve

of the GA since the beginning, we were unable to find any record of his reappointment over the last six years.

**USTAR Needs to Ensure Compliance with Open Meeting Laws.** USTAR management needs to work with the GA to ensure compliance with the State's Open and Public Meetings Act. USTAR's open meeting minutes have not been written or maintained as required by the law and statutorily required recordings of open meetings are few. We also found that closed meeting practices of the GA have not been in compliance with statutory provisions for closed meeting records and discussions. Finally, while USTAR has an assigned representative from the attorney general's office, they have not utilized this resource to help them ensure compliance.



# REPORT TO THE UTAH LEGISLATURE

Report No. 2013-12

## **A Performance Audit of the USTAR Science Technology and Research Initiative (USTAR)**

October 2013

Audit Performed By:

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# Chapter I

## Introduction

The Utah Science Technology and Research Initiative (USTAR) is a long-term state-funded investment to strengthen Utah’s “knowledge economy.” In March 2006, the State Legislature passed Senate Bill 75 creating USTAR. This measure provided funding for strategic investments to:

- **Research Teams:** Allocate money to the University of Utah (U of U) and Utah State University (USU) for research teams to conduct science and technology research. As of July 31, 2013, 42 researchers or principal investigators (PIs) were employed at the U of U and USU.
- **Facilities:** Plan, design, and construct research buildings at USU and the U of U. The USU USTAR building was dedicated in October 2010 and the U of U USTAR building was dedicated in April 2012.
- **Technology Outreach:** Establish a technology outreach program at up to five locations distributed strategically throughout Utah. In addition to statewide initiatives, four Technology Outreach Innovation Programs (TOIPs) are currently established in four regions of the state.

The mission of the USTAR initiative is twofold. First, the initiative should enhance economic development in the state. Second, the initiative should leverage state dollars to enhance Utah’s research universities through investment in research teams and buildings, resulting in the commercialization of innovative technologies. Ultimately, the USTAR initiative is intended to enhance and leverage state resources by delivering more technology-based start-up firms, more high-paying job opportunities, and more business activity with an associated expansion of the tax base.

The USTAR outreach mission is to act as a resource to broker ideas, engage local entrepreneurs and professors, screen business ideas, connect market ideas and technologies, assist businesses and universities in developing commercial applications, and disseminate

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**USTAR is a long-term state funded investment to strengthen Utah’s “knowledge economy.”**

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**The mission of USTAR is to enhance and leverage state resources by delivering more technology-based start-up firms, high paying jobs, and business activity with an associated expansion of the tax base.**

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and share research developments with all interested parties. To help with the day-to-day operations of USTAR, statute articulates that the USTAR Governing Authority (GA) have a full-time executive director who provides staff support for the GA and serves at the pleasure of the GA.

## **USTAR Operates Under the Direction of the Governing Authority**

USTAR has a GA whose appointment and powers are stipulated in statute. With regards to the appointment of GA members, *Utah Code* 63M-2-301(1) states the following:

There is created the Utah Science Technology and Research Governing Authority consisting of the state treasurer, the executive director of the Governor's Office of Economic Development, and the following eight members appointed as follows with the consent of the Senate:

- (a) three appointed by the governor;
- (b) two appointed by the president of the Senate;
- (c) two appointed by the speaker of the House of Representatives; and
- (d) one appointed by the commissioner of higher education.

The eight appointed members of the GA serve four-year staggered terms while the chair, selected by the Governor, serves a one-year term. The GA is required to meet monthly to oversee the operations of the USTAR project.

The GA powers are laid out in *Utah Code* 63M-2-302(1), which states, in part, that the GA shall:

- Ensure funds appropriated are used appropriately, effectively, and efficiently
- In cooperation with the universities' administrations, expand key research at the two research universities

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**USTAR's Governing Authority consists of the state treasurer, the executive director of the Governor's Office of Economic Development, and eight appointed members.**

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**The Governing Authority is required by statute to ensure USTAR funds are used appropriately, effectively, and efficiently.**

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- Enhance technology transfer and commercialization of research and technologies to create high-quality jobs and new industries in Utah's private sector
- Review state and local economic development plans and appropriations to prevent duplication
- Establish economic development objectives for the project
- Make rules for allocating appropriated funds between Utah State University and the University of Utah for research teams and commercialization of new technology
- Verify that the project is being enhanced by research grants and meeting the GA's economic development objectives
- Monitor all research plans
- Develop methods and incentives to encourage investment in and contributions to the project from the private sector
- Annually report and make recommendations to the Governor and Legislature.

Once appropriations have been made, it is ultimately the GA's responsibility to ensure that funds are spent in accordance with legislative intent. The GA relies heavily on their executive director who serves at their pleasure. Ensuring that the USTAR initiative is operated efficiently and effectively is important because of the significant state investment.

### **Significant State Investments Made in USTAR in Hope of Significant Returns**

Significant state investments have been made in USTAR in the form of annual legislative appropriations and the issuance of general obligation bonds (which are being repaid with funds other than the state appropriations to USTAR). In addition to state funding, the Legislature also appropriated \$33 million in federal American

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**A total of \$334 million in state and federal funds have been invested in USTAR from fiscal year 2007 through 2014.**

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Recovery and Reinvestment Act (ARRA) funds to USTAR. Total state and federal dollars invested in USTAR through fiscal year 2014 (including the general obligation construction bonds) equals almost **\$334 million**, as follows:

- From fiscal years 2007 through 2014, state General Fund appropriations equal over **\$134.2 million** (fiscal year 2014 numbers are budgeted amounts).
- Federal ARRA stimulus dollars received and spent in fiscal years 2010 and 2011 equal **\$33 million** (this money was appropriated by the Legislature to USTAR to replace cuts in its General Fund appropriations).
- State costs for the construction bonds for the U of U and USU USTAR buildings equal over **\$166.5 million**. These bonds are scheduled to be paid off in fiscal year 2017.

With an investment of nearly **\$334 million** in public resources, the USTAR initiative should promote significant returns. According to USTAR's economic prospectus, the model for doing this is to:

- Leverage the state investment with federal dollars through sponsored research
- Accelerate the current rate of high-technology company start-ups, which in turn support the creation of high-paying jobs in growing industries
- Generate a net return to the state in the form of tax revenues

While \$334 million represents the investment in USTAR, Chapter II of this report discusses the outcomes of the USTAR program to date.

## **Audit Scope and Objectives**

Because of the significant state investment in USTAR, this audit was requested to ensure that state money has been used efficiently and

effectively. In addition, the audit request asked that we identify the resources that have been provided to the USTAR initiative to date, review reported outcomes achieved from the resources provided, and report on operations. To address the audit request, the objectives of this audit were to validate reported outcomes, ensure expenditures are in-line with the mission of USTAR, and evaluate the efficiency and effectiveness of operations. This chapter has addressed the public resources portion of the audit request. The remainder of the audit request will be addressed in the following chapters:

- Chapter II – Differences between reported and actual outcomes
- Chapter III – Oversight of research team funding
- Chapter IV – Oversight of research buildings
- Chapter V – Management of outreach efforts
- Chapter VI – Administration and governance of operations

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**This audit was requested to ensure state money has been used efficiently and effectively and to validate USTAR's reported outcomes.**

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## Chapter II

# USTAR's Reported Return on Investment Is Inaccurate and Flawed

One of our audit objectives was to validate the outcomes of the program as reported by USTAR. This chapter focuses on the differences between reported and actual outcomes. We found that USTAR's reported January 2013 return on investment (ROI) was inaccurate and flawed. USTAR reported that the initiative had provided a 219 percent ROI. This ROI is inaccurate because over half of the reported \$463 million in revenue was invalid. The reported ROI was flawed because it reported revenues to the USTAR program as an ROI rather than reporting an actual ROI, which is the expansion of tax revenue to the state.

Our concerns with the numbers presented by USTAR are as follows:

- USTAR's reported revenues were inaccurate and overstated because dollars presented were unrealized, invalid, and overreported.
- USTAR's reported jobs were inaccurate because they included jobs that no longer exist, were based on projections instead of actuals, and included duplicate counts. Because USTAR administrators were unable to provide documentation to validate the numbers that they used to calculate their reported jobs number, we conducted interviews with individuals associated with the USTAR program and performed audit tests to review the accuracy of the information provided. These interviews and tests raised a number of concerns.
- USTAR's reported ROI was flawed because it did not reflect an actual ROI, which is an expansion of the state's tax base driven by growth or formation of companies with associated new high-quality jobs.
- USTAR's reported commercialization revenues have not met expectations.

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**USTAR's reported return on investment was inaccurate because reported revenues were overstated and flawed because it did not capture an expansion of tax revenue to the state.**

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**Expectations for reporting outcomes are unclear and a mechanism for validating self-reported numbers has not been instituted.**

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**USTAR overreported \$254 million in engineering contracts and private investments as well as \$4.4 million in sponsored research.**

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**Missing from USTAR's reported ROI is the appropriate portion of the \$166.5 million in construction costs.**

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In addition to these concerns, we found that expectations for reporting outcomes were unclear and a mechanism for validating self-reported numbers had not been instituted. This chapter will discuss these concerns and make suggestions for improving the accuracy of the USTAR information that is presented to the Legislature and taxpayers.

## **USTAR's Reported Revenues Are Overstated and Inaccurate**

USTAR's reported outcomes, or revenues generated, do not reflect accurate information. Further, as will be discussed later in this chapter, the revenues reported by USTAR are not an ROI to the state. Nonetheless, we attempted to validate these reported revenues because they are important to USTAR's operations. Our concerns with USTAR's reported revenues include the following:

- Overreporting \$254 million in engineering contracts and private investments
- Overreporting \$4.4 million in sponsored research
- Inaccuracies with reported outreach metrics

To address these revenue concerns along with concerns raised by reported jobs numbers, we recommend that USTAR management implement mechanisms to document and validate reported numbers.

Figure 2.1 shows USTAR's calculated ROI, which is based on \$463 million in public and private funds raised, minus \$145 million in public dollars invested for USTAR researchers and other USTAR program-related costs, divided by these costs (see Appendix A for a copy of USTAR's reported ROI). One important expenditure missing from USTAR's costs is the appropriate portion of the \$166.5 million in construction costs that have been bonded for.

**Figure 2.1 USTAR’s Reported ROI Does Not Reflect Accurate Information.** USTAR reported revenues were inaccurate for a number of reasons, including overstatements, reporting of revenue that has yet to be realized, and reporting of revenue unaffiliated with USTAR.

USTAR Reported ROI*				
	University of Utah	Utah State	Outreach	Total
Sponsored Research	\$ 92,314,316	\$ 50,000,000		\$ 142,314,316
Engineering Contracts		134,000,000		134,000,000
Private Investment		130,000,000		130,000,000
Technology Outreach and Innovation Program			38,000,000	38,000,000
BioInnovations Gateway			12,847,000	12,847,000
SBIR-STTR Assistance Center			5,814,977	5,814,977
<b>Total USTAR Revenue Raised</b>				<b>\$ 462,976,293</b>
General Funds Invested				112,232,600
Federal ARRA Stimulus				33,000,000
<b>Total State and Federal Contribution</b>				<b>\$ 145,232,600</b>
<b>Total USTAR ROI</b>				<b>219%</b>

\*Source: USTAR Return on Investment Report, January 2013 (see Appendix A).

It would appear that USU is making a more significant contribution to USTAR revenue through private investments and engineering contracts than the U of U, as shown in Figure 2.1. However, at closer inspection, the numbers being reported from USU are not accurate.

### USTAR’s Reporting of USU’s Revenues Was Inaccurate

USTAR’s reporting of USU’s revenues was inaccurate because \$254 million, a significant portion of the reported revenues, was not realized at the time of reporting and invalid because significant monies were not attributable to USTAR.

**Unrealized Revenues from an Engineering Contract of \$134 Million Were Reported as Realized.** The \$134 million in engineering contract funds at USU is inaccurate because, while these funds were reported as realized, they have not been realized to date. Engineering contracts are contracts with private companies that commit to help fund USTAR-related projects. USU’s reported engineering contract is with one company, which entered into a strategic partnership with a USTAR-supported company to launch a sensor into space for improved weather forecasting. As of July 29, 2013, no funds have been released for this project, although they are still anticipated to be released, assuming the project continues as planned.

**\$134 million in engineering contract funds were reported as realized although they have not been realized to date.**

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**\$120 million of the \$130 million in private investment funds reported came from a company that was not affiliated with USTAR-funded research.**

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**USTAR Reported Significant Private Investments of \$120 Million That Should Not Have Been Reported.** Of the \$130 million in private investment funds reported, \$120 million came from a company that was not affiliated with USTAR-funded research. A private investment refers to the amount of venture capital or private equity raised by USTAR associates related to spin-in and spin-out technologies (spin-in refers to existing technologies brought into the university and spin-out refers to technology developed within the university and spun-out for purposes of commercialization).

This spin-in company donated its technology to USU for further development but any revenue generated from this company would not be shared with USTAR. When we asked USU's Vice President of Commercialization and Regional Development about whether to credit this company to USTAR, we were told that the company used USU business consultants paid in part with USTAR funds, but that the company would have existed without USTAR. Additionally, documentation of USU projects for which USU is planning on sharing commercialization revenue with USTAR indicated that USTAR would not be entitled to any commercialization revenue generated from this company.

The remaining 13 companies appear valid as they would not be in existence without USTAR funding or support according to the vice president of Commercialization and Regional Development at USU. Ten of these companies received a total USTAR contribution of \$7.1 million. These contributions went to USTAR researchers or teams to develop technologies utilized by the companies.

### **Sponsored Research Has Met Expectations, But Was Still Overreported**

While sponsored research has met the original projections outlined in the economic prospectus<sup>1</sup>, it was still overstated by USTAR by \$4.4 million. Sponsored research includes external funds raised by

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**Sponsored research has met the original projections outlined in the economic prospectus, but was overstated by \$4.4 million.**

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<sup>1</sup> *Utah Science Technology and Research (USTAR), Economic Development Initiative, Economic Prospectus, October 2005.* The analysis was conducted by the Bureau of Economic and Business Research (BEBR), David Eccles School of Business, University of Utah. The Prospectus was developed to promote the creation and funding of USTAR.

<http://www.ustar.utah.edu/wp-content/uploads/ExecutiveSummary.pdf>  
<http://ustar.usu.edu/files/uploads/Exhibits&WorkingPapers.pdf>



researchers in the form of grants awarded. Typically, these are federal grants but can also include industry-sponsored research grants. In January 2013, USTAR reported \$142.3 million in sponsored research. However, university data for all grants awarded through fiscal year 2012 (as used by USTAR) indicated a total of \$137.9 million in grants awarded. The \$4.4 million discrepancy was a result of an over-reporting of USU's sponsored research.

The U of U generated \$92.3 million and USU generated \$45.6 million in research related grants. USU's number reflects both USTAR researchers who raised about \$37.6 million as well as affiliated researchers who raised about \$8 million. As will be discussed in Chapter III of this report, it remains unclear if USTAR will be able to capture potential commercialization revenue from affiliated researchers. Affiliated researchers are researchers who collaborate with USTAR researchers and/or use USTAR infrastructure to conduct their research. It is questionable if USTAR should take credit for sponsored research related to affiliates unless USTAR clearly establishes the right to share in any potential commercialization revenues.

Research-related grants have met projected expectations of the economic prospectus and have exceeded the cumulative research team investment by 44 percent. In interviews conducted with USTAR researchers, many reported that obtaining grants to help fund their research was a clear expectation of the USTAR program while other expectations remained less clear. This may be why sponsored research has been one of the more successful performance metrics for the USTAR program. Sponsored research funds have also been instrumental in generating new research-related jobs, which will be addressed in the jobs section of this chapter.

### **Reported Outreach Performance Metrics Were Inaccurate Raising Concerns**

We developed concerns with the reported outreach performance metrics because outreach assistance is provided to private companies who self-report their performance information. USTAR's outreach programs report assisting companies in raising \$56.7 million in external funding. Our concern with this reported metric is that it is self-reported and USTAR management has not developed any mechanism to validate self-reported data.

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**The U of U generated \$92.3 million and USU generated \$45.6 million in research related grants, exceeding the cumulative research team investment by 44 percent.**

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**USTAR's outreach program metrics raise concerns because the data is self-reported and USTAR management has not developed any mechanism to validate self-reported data.**

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Several regional directors we spoke with acknowledged that double counting is a problem because both outreach regions and universities collaborate on projects.

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USTAR's Bio-innovation Gateway is a non-profit business incubator as well as a career and technical education program for high school students.

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**Outreach Regions' Reporting of Metrics Is Not Validated, Leading to Inaccuracies.** The four outreach regions reported assisting companies in raising a total of \$38 million in external funding. Outreach regions report their performance metrics to USTAR administrative staff using a cloud computing system called Salesforce. The information reported in Salesforce comes from each regional director calling the companies they work with and asking them to estimate the amount of state and external funding as well as the number of jobs and companies generated by each project. One regional director we spoke with stated that the expectations for what metrics to report are unclear and the results are inflated. Several regional directors we spoke with acknowledged that double counting is a problem because both outreach regions and universities collaborate on projects.

**The Bio-innovation Gateway (BiG) Relies on Self-Reported Information for Tracking and Reporting Success.** BiG is an outreach initiative that is a non-profit business incubator as well as a career and technical education program for high school students. While BiG receives funding from and reports to USTAR, USTAR's administrators have not provided clear guidance on what is expected.

According to their performance metrics, BiG helped eight companies raise \$12.8 million in private capital since the program began. Most of the private capital raised, \$11 million of the \$12.8 million, came from one company that no longer resides at BiG due to company growth. We asked BiG's executive director how they report and validate performance metrics. The director said that they hold quarterly meetings with the companies. While we recognize the effort being made, the data is still self-reported and has not been validated.

**Lack of Controls and Inconsistent Practices with Regards to Fees Made It Difficult to Validate Assistance in Obtaining Grants.** Another outreach initiative is USTAR's SBIR-STTR Assistance Center (SSAC). SSAC-reported numbers could not be validated due to a lack of controls and inconsistent practices with regards to fees. Eligible small businesses can receive federal funding for research and development through Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grant programs. In USTAR's January 2013 report, SSAC reported

assisting 16 small technology businesses in winning \$5.8 million in federal grants.

In order to validate SSAC's contribution to grants won, we requested information regarding the amount of time spent assisting companies. This is a metric that was not tracked. We also requested documentation regarding the amount businesses paid for SSAC's services. According to SSAC's fee schedule, small business should be charged fees in order to recapture some of the costs associated with services provided by the center. Our review showed that only one of the 16 companies was required to pay a fee of \$500. One company we spoke with reported receiving helpful support from SSAC. Without controls such as a record of time spent, program fees assessed, or some other control, it is difficult to determine the extent to which the SSAC program can take credit for the federal grants won.

### **USTAR Management Needs to Identify and Validate Key Performance Metrics**

Concerns identified with inaccurate data highlight the need for USTAR management to specify in administrative rule or policies and procedures what performance metrics should be reported and how these metrics will be validated. USTAR needs to develop a post-performance review process that ensures research and outreach program accountability.

We spoke with the vice-chair of USTAR's Governing Authority, who is also the director of the Governor's Office of Economic Development (GOED), about GOED's performance review process of companies that participate in its incentive programs. He told us GOED issues contracts with clearly-defined expectations. Internal audits are conducted to verify expectations are being met. We spoke with another GOED official who provided us documentation illustrating GOED's post-performance review process with companies that participate in its incentive programs.

We believe USTAR management should develop performance expectations for research as well as outreach regions and initiatives and also develop a mechanism to validate and document reported outcomes. Without a mechanism in place to validate reported numbers, expectations are not meaningful and reported results may not be accurate.

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**USTAR's SBIR-STTR Assistance Center only required one of the 16 companies they worked with to pay a fee for their services despite having a fee schedule.**

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**USTAR management needs to specify in administrative rule or policies and procedures what performance metrics should be reported and how these metrics will be validated.**

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## Reported Jobs Numbers Were Inaccurate And Did Not Identify Job Quality

**USTAR was unable to produce supporting documentation to independently validate the 3,380 jobs they reported.**

USTAR was unable to produce supporting documentation to independently validate the 3,380 jobs they reported. Our review of USTAR’s reported numbers revealed inaccuracies because they included jobs that are no longer present, are based on projected rather than actual job numbers, and include some jobs that are being double counted. Additionally, it was difficult for us to determine whether the jobs being reported are “high-quality” because this term has not been defined by USTAR management.

Figure 2.2 is an illustrative breakdown of the 3,380 jobs that were reported by USTAR in January 2013. It is important to note that the \$11 million in tax revenue was not calculated in USTAR’s reported ROI. To calculate an ROI, USTAR would have needed to report the change in state tax revenue that has resulted from the USTAR program after the costs of the program had been accounted for.

**Figure 2.2 USTAR’s Reported Economic Impact Is Inaccurate.** USTAR job estimates, earnings, and tax revenue were based on projections and were not included in their ROI calculation.

**There were significant concerns with the accuracy and quality of the jobs number reported by USTAR.**

<b>USTAR Reported Economic Impact</b>		
BEBR (estimates)		<b>2,930</b>
construction	1,737	
research	1,102	
outreach	91	
SalesForce		<b>412</b>
Administrative Personnel		<b>32</b>
*Unknown		<b>6</b>
Estimated Jobs Created		<b>3,380</b>
Estimated Earnings	\$	125,799,634
Estimated UT Tax Revenue	\$	10,994,888

*Source: USTAR Return on Investment Report January 2013.*

*\* Unknown number is a result of USTAR being unable to recreate source documents.*

Figure 2.2 shows USTAR’s reported jobs number. The numbers in red reflect our best estimate, in the absence of source documentation, for determining how USTAR established their jobs number. Additionally, there were significant concerns with the accuracy and

quality of the jobs number reported. As of January 2013, USTAR reported 3,380 jobs, reflecting spending on research teams, outreach activities, research facility construction, and administrative personnel. Inaccuracies in the jobs numbers resulted in inaccuracies in earnings and Utah tax revenue, all of which were reported by USTAR as shown in Appendix A. Because the expansion of tax revenue reflects an accurate ROI and thus helps taxpayers and the Legislature gauge the relative success of the USTAR program, it is important that the jobs numbers be accurately tracked and reported. The unknown number of six jobs is a result of USTAR administration being unable to provide source documentation for the number they reported.

### **USTAR Could Not Provide Documentation for Jobs Numbers**

USTAR administrative staff could not provide the source documentation needed to audit the validity of the jobs numbers that they reported. We expect USTAR administrators to maintain accurate information regarding the number of jobs the USTAR program has created. In the absence of this information, we attempted to recreate the jobs number reported by USTAR by pulling information together from various sources. As a result, we calculated:

- 2,930 jobs reported in the 2012 Bureau of Economic and Business Research (BEBR) report
- 412 jobs from outreach data reported in Salesforce
- 32 jobs from USTAR administration and outreach positions

Our total of 3,374 jobs was slightly less than the 3,380 jobs reported by USTAR management. Again, an exact replication was impossible because USTAR management was unable to supply documentation for us to determine how USTAR generated their jobs number.

Once we were able to approximate USTAR's jobs number in consultation with USTAR management, we attempted to validate the accuracy of the numbers. This exercise revealed some significant concerns. The following sections will discuss these concerns.

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**USTAR management was unable to supply documentation needed to audit the validity of jobs numbers that they reported.**

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## **Jobs Numbers Were Based on Projections and Included Construction Jobs That No Longer Exist**

USTAR's reported jobs number was inaccurate because it included projected calculations, were based largely on construction-related jobs that no longer exist, and included research team jobs also based on projections. The following provides some additional detail regarding these inaccuracies and highlights the need for USTAR to report actual jobs numbers when possible and identify when estimates are being used.

**Jobs Numbers Were Calculated with the Same Modeling System Used to Justify the Creation of USTAR.** As of fiscal year 2011, 2,930 jobs were reported in the 2012 BEBR report<sup>2</sup>. These jobs were based on a commonly used methodology called the Regional Input-Output Modeling System (RIMS II). RIMS II was developed by the U.S. Bureau of Economic Analysis and was used by the BEBR report to evaluate the direct, indirect, and induced economic effect of increases in economic activity attributable to USTAR. A direct job refers to employment directly related to USTAR businesses or research activities. If additional businesses supply goods and services, these are indirect jobs. Finally, when these directly and indirectly generated jobs result in spending on the broader economy, there is an induced employment effect. The economic impact assumptions developed in the original prospectus had to be revised in the 2012 BEBR report due to lower than anticipated state funding to USTAR.

**The Majority (59 Percent) of the 2,930 Jobs Reported by USTAR Were Construction-Related Jobs.** In January 2013, USTAR's reported jobs number was inflated by the fact that 1,737 of the reported jobs were construction jobs that were no longer in existence because of the completion of the two research buildings. USU's BioInnovations Building was completed in September 2010 and the U of U's Sorensen Building opened in April 2012.

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**USTAR's jobs numbers were calculated, in part, with modeled projections.**

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**59 percent of the jobs reported by USTAR were construction jobs that were no longer in existence because of the completion of the two research buildings.**

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<sup>2</sup> For a discussion regarding the assumptions of the RIMS II model used to estimate jobs numbers see: *Estimating the Economic Contributions of the Utah Science Technology and Research Initiative (USTAR) to the Utah Economy*, February 2012. Bureau of Economic and Business Research, University of Utah, Appendix A.

[http://www.bibr.utah.edu/Documents/studies/USTAR\\_Econ\\_Contributions.pdf](http://www.bibr.utah.edu/Documents/studies/USTAR_Econ_Contributions.pdf)

Since these jobs are gone, they are no longer contributing to USTAR's economic impact. The loss of construction-related jobs was anticipated in the economic prospectus which showed that by fiscal year 2013, these jobs would no longer exist. Yet, in January 2013, USTAR reported construction jobs taken from BEBR estimates for fiscal year 2011.

**Research Team Jobs Were Based on Projections that Included Multipliers.** Research teams comprised the second largest projected contribution to jobs with 1,102 or 38 percent of the 2,930 jobs. These jobs too were based on BEBR-reported projections and do not represent the actual number of research-related jobs. Research employment was determined using multipliers; for example, for every \$1 million spent on research contracts, 39 jobs were anticipated. In order to obtain actuals, we asked the U of U and USU to provide the number of actual jobs related to USTAR researchers. As of July 2013, a total of 197 full-time jobs were reported by the two research institutions:

- U of U reports 165 full-time positions and 178 part-time positions (part-time positions are primarily student jobs) related to USTAR researchers.
- USU reports 32 full-time positions and 124 part-time positions (part-time positions are primarily student jobs) related to USTAR researchers.

Since these numbers are actuals, they do not account for indirect or induced jobs estimated by the 2012 BEBR study, but 197 full-time and 302 part-time jobs is significantly less than the reported 1,102 jobs. Many of the full-time research-related jobs are publicly funded. Researchers, however, enhance the number of jobs brought to Utah by hiring additional staff with grant-related funding.

### **Outreach Jobs Were Inaccurate And Include Duplicate Counts**

The current outcomes being reported by outreach regions are inaccurate. As shown in Figure 2.2, the 91 outreach jobs (counted in fiscal year 2011) and 412 Salesforce jobs (counted in fiscal year 2013) were both point-in-time counts at different times but were added together resulting in one example of a duplicate count. We also

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**38 percent of the jobs were based on reported projections and do not represent actual numbers.**

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**As of July 2013, a total of 197 full-time research-related jobs were reported by Utah State University and the University of Utah, significantly less than the reported 1,102 research jobs.**

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sampled the top ten job-generating companies reported by USTAR as of May 28, 2013 in order to validate the number of jobs created by USTAR’s outreach regions. We found that 99 jobs, 49 percent of our sample, could not be validated because the jobs were not directly related to USTAR or they were associated with the research universities and also double counted. Figure 2.3 shows the top ten job-generating companies as reported by USTAR’s outreach regions. This is 201 jobs, which is 41 percent of the total jobs reported by outreach regions as of May 28, 2013.

**Figure 2.3 USTAR’s Top Ten Outreach Job-Generating Companies Included Invalid and Duplicate Counts.** As of May 28, 2013, USTAR’s outreach program reported 490 jobs. Forty-one percent of these jobs were credited to the top ten job-generating companies shown in this figure, but half of these sampled jobs were either invalid or duplicate counts.

We sampled the top ten job-generating companies reported by USTAR’s outreach regions and found that 49 percent of our sample could not be validated because the jobs were not directly related to USTAR or they were associated with the research universities and thus double counted.

Outreach Region	Company	Jobs
USTAR EAST	Company 1	53
USTAR CENTRAL	Researcher 1	29
USTAR HQ	Company 2	24
USTAR SOUTH	Company 3	22
USTAR CENTRAL	Company 4	20
USTAR NORTH	Company 5	15
USTAR SOUTH	Company 6	12
USTAR CENTRAL	Researcher 2	9
USTAR CENTRAL	Company 7	9
USTAR EAST	Researcher 3	8
<b>Total</b>		<b>201</b>

As previously mentioned, most of the data reported by the outreach regions is self-reported by companies or researchers who have received assistance from an outreach region. Since USTAR has no mechanism in place or documentation to validate the reported jobs, we contacted the top ten job-generating companies or research teams.

**USTAR Took Credit for 53 Jobs That Were Not a Result of USTAR.** Company 1’s CEO revealed the 53 jobs reported were not valid. He informed us that these jobs are related to the startup and production of a mine that is not currently operational. This CEO stated that these mine-related jobs were not due to USTAR outreach support.



**USTAR Outreach Took Credit for Research University Related Jobs, Resulting in Double Counting.** We also questioned the validity of the three research “companies” (in red). This included a total of 46 jobs that, according to discussions with researchers, were research-related jobs associated with the state’s research universities. These jobs should either be credited to the universities or outreach, but clearly not both.

**Other Reported Jobs Appear Valid, But No Documentation Was Provided.** The remaining 102 reported jobs shown in Figure 2.3 from companies 2, 3, 4, 5, 6, and 7 appear to be valid based on reports from the companies we contacted. What portion of these jobs should be credited to outreach, however, remains unclear as USTAR management could not provide documentation to validate these jobs. In the absence of documentation, we contacted each of these companies and asked about their jobs numbers as well as their opinion of the support they received from their respective outreach region. These companies reported that, in general, the outreach regions contributed to their company’s success and helped them create jobs that would not be in existence without such assistance.

For example, one company credited outreach funding and assistance for helping them create the nine jobs they currently have. Another company stated that, without outreach assistance, the company would cease to exist. Specifically, outreach efforts helped this company develop a business model and strategize about debt management, which ultimately led to the company’s success. In most instances, the companies considered the jobs created through outreach assistance as high-paying. One company, however, claimed most of the jobs created through outreach assistance were low-paying.

As previously mentioned, universities and outreach regions counting the same outcomes results in double counting and inflated numbers. This problem was acknowledged as a concern in discussions with regional directors and highlights the need for a clear delineation in reporting performance outcomes between research teams and outreach regions. It may also be helpful to differentiate between researcher-related jobs and jobs that have been created through the formation or expansion of companies.

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**Companies reported that outreach regions contributed to their company’s success and helped them create jobs that would not be in existence without such assistance.**

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**Universities and outreach regions counting the same outcomes results in double counting and inflated numbers.**

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## USTAR Management Needs to Define High-Quality Jobs

USTAR has not defined or documented high-quality jobs. Based on data collected at universities and discussions with individuals associated with USTAR, few high-quality jobs have been created by the USTAR program. It is clear that the USTAR program was designed to generate jobs of high quality. This is outlined in the original prospectus, which begins by stating the reason taxpayers should invest in the state's research universities was to create:

- More technology-based start-up firms in Utah;
- More high-paying job opportunities; and
- More business activity in Utah with an associated expansion of the tax base.

Further, statute states that the governing authority shall utilize research institutions "to create high-quality jobs and new industries in the private sector in Utah." To date, few high-quality jobs can be documented as a result of start-up firms generated at the research universities.

We contacted the one researcher at the U of U that had generated start-up related jobs who reported six full-time jobs and four part-time hourly paid jobs. Since there were no criteria to determine what constitutes a high-quality job, this researcher regarded all full-time jobs as high-quality. Part-time jobs, which are currently being reported as USTAR jobs, cannot reasonably be considered jobs of high quality.

Another approach we took in determining the number of high-quality jobs was to ask the outreach directors and conduct interviews with companies that had regional outreach support. There did not appear to be a consensus regarding how to count a company or a job, let alone how to determine whether the jobs are high-quality. This is in part due to the fact that there are no guidelines for defining high quality.

The Governor's Office of Economic Development (GOED) defines high-quality jobs as paying at least 125 percent of urban county wages and 100 percent of rural county wages. Statutory direction for GOED defines high-quality as employment with a

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**The USTAR program was designed to generate jobs of high quality but USTAR has not defined or documented high-quality jobs.**

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**There did not appear to be a consensus among outreach regions regarding how to count a company or a job, let alone how to determine whether the jobs are high-quality.**

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business entity “that compares favorably against the average wage of the community.” According to USTAR outreach directors, reported jobs appeared to be a combination of high-quality and low-quality. A similar consensus was reached with the companies we spoke with.

## **USTAR’s Reported ROI Was Flawed**

USTAR has inaccurately portrayed an ROI by focusing on publicly and privately funded revenue rather than the expansion of Utah’s tax base. According to the economic prospectus, a return on investment is defined as “the net present value of taxes returned to the State in new tax revenue generated by USTAR after accounting for the costs of USTAR.” The economic prospectus projected \$4.97 billion in new tax revenue generated over 30 years with a cumulative state investment of \$973 million. Clearly, USTAR was funded with the anticipation of increasing state tax revenue. We therefore recommend that USTAR management record and report this information as their ROI.

The USTAR program was promoted as an economic development initiative that would drive growth in jobs, incomes, and taxes for the state of Utah, all key metrics of the program’s success. The expansion of Utah’s tax base is considered to be the only metric that constitutes an ROI. USTAR’s reported ROI of 219 percent is based on metrics that do not capture an accurate ROI. An accurate ROI, according to the Legislature’s Chief Economist, should reflect an expansion of Utah’s tax revenue driven by additional jobs added to the state as a result of the USTAR program.

We are concerned that USTAR management has not taken the necessary steps to track, monitor, and report accurate ROI information to the state. While we recognize that publicly and privately funded awards to USTAR researchers can and are used to employ additional researchers, research assistants, and support staff, the awards themselves do not reflect an ROI. USTAR’s focus on the intermediate steps of public and private awards misses the most significant returns to the state - growth in jobs, incomes, and taxes.

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**According to the economic prospectus, a return on investment is defined as “the net present value of taxes returned to the State in new tax revenue generated by USTAR after accounting for the costs of USTAR.”**

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**USTAR reported ROI of 219 percent is based on metrics that do not capture an accurate ROI, which is an expansion of Utah’s tax revenue driven by additional jobs added to the state as a result of the USTAR program.**

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## USTAR's Commercialization Success Has Been Limited

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**The 2012 BEBR report found that, in contrast to expectations, no commercialization revenue had been generated.**

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Commercialization revenue, another key indicator of USTAR's success, has been limited. Commercialization revenue is important because it results after all the other steps of commercialization have been successfully implemented. The 2012 BEBR report projected that by fiscal year 2011, USTAR would have generated \$432,222 in commercialization revenue. The 2012 BEBR report found that, in contrast to expectations, no commercialization revenue had been generated.

An updated accounting of commercialization revenue generated as of August 2013 indicates no additional commercialization revenue has been generated at the University of Utah and about \$33,000 has been generated at USU. This new revenue highlights the need for USTAR administrators to start reporting commercialization revenue, which is not currently being done. USTAR was unable to provide us information pertaining to commercialization revenues generated so we had to obtain this information from the universities. As will be discussed in Chapter III, we are concerned that commercialization revenue is not being monitored and tracked by USTAR management.

### Recommendations

1. We recommend that USTAR report actual outcomes where possible and identify when estimates are being used when reporting performance metrics.
2. We recommend that USTAR develop a methodology to accurately track, validate (post performance reviews), and report key metrics such as jobs created, companies formed, and commercialization revenue generated to ensure that reported information is accurate.
3. We recommend that USTAR develop measures for defining high-quality jobs.
4. We recommend that USTAR report to the Legislature an accurate return on investment, which is the change to the state's tax revenue.

## Chapter III

# USTAR Should Improve Oversight of Research Team Funding

USTAR should improve its oversight of research team funding in two areas. First, USTAR should clarify its expectations associated with allocations of research funding by:

- Requiring routine reporting of clearly defined research team metrics and creating performance standards when possible
- Enforcing reporting rules and clarifying the definition of a USTAR project to ensure that commercialization revenue is appropriately shared

Second, USTAR should ensure its budgetary practices provide adequate oversight of research team funds by:

- Following budget approval and funding allocation rules
- Clarifying its financial commitments to research teams
- Ensuring the uses of research team monies for purposes other than researcher activities are appropriate and receive prior approval

As discussed in Chapter I, one of the main purposes of the USTAR initiative is to allocate funds to the University of Utah (U of U) and Utah State University (USU) for the hiring of research teams. These research teams are intended to conduct technological research to create innovations that will produce commercialization revenue, high-quality jobs, and new industries in Utah's private sector.

### **USTAR Provides Significant Public Funding for Research Teams**

Between fiscal year 2007 and 2013, about \$124 million of USTAR funds were used to cover research program costs at the U of U and USU. Although USTAR funds are used to hire and support university researchers (also referred to as principal investigators or PIs), the researchers are not employees of USTAR.

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**USTAR should clarify its expectations for research teams that receive financial support.**

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**USTAR should ensure its budgetary practices provide adequate oversight of research team funding.**

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Instead, researchers enter into agreements<sup>3</sup> with the U of U and USU similar to other faculty, but receive financial support from the USTAR initiative. In addition to research work, USTAR researchers have teaching and service responsibilities like other university faculty have. USTAR researchers also seek out sources of extramural funding, such as federal grants or private funding, to help support their research work and hire support staff. Figure 3.1 outlines the USTAR research expenditures at the two universities.

**Figure 3.1 Between Fiscal Years 2007 and 2013, USTAR Funds Covered about \$124 Million in Research Team Costs.** The U of U and USU receive research team financial support through the USTAR initiative.

Fiscal Year	U of U	USU	Total
2007	\$128,047	\$2,136,552	\$2,264,599
2008	8,819,192	4,651,186	13,470,378
2009	11,992,964	5,619,733	17,612,697
2010	12,159,312	6,352,571	18,511,883
2011	12,730,038	8,939,999	21,670,037
2012	14,192,639	8,170,600	22,363,239
2013	14,301,121	13,513,135	27,814,256
<b>Total</b>	<b>\$74,323,314</b>	<b>\$49,383,776</b>	<b>\$123,707,090</b>

Source: USTAR

Note: In addition to research funds, USTAR allocated about \$2 million to the U of U and USU between FY 2010 and 2013 through a grant program called Technology Commercialization Grants (TCG). USTAR's TCG program (now called the Go-To-Market grant program) will be discussed in Chapter 5.

As shown in the above figure, the U of U has received 60 percent of total USTAR research funding while USU has received 40 percent. Also, spending of USTAR funds by the universities has been varied. A lag in spending, such as at the U of U in fiscal year 2007, appears to be due to the timing of when hiring commitments with researchers were secured and research programs were started.

USTAR budget documents show that the U of U is anticipating funding 12 research programs with USTAR dollars in fiscal year 2014, while USU is expecting to fund 8 programs. For an outline of all USTAR revenues and expenditures, including anticipated spending

<sup>3</sup> The research universities have executed Memorandums of Understanding with USTAR researchers. However, USTAR is not a legal party to these agreements.

The USTAR initiative has allocated about \$124 million to research teams at the U of U and USU through fiscal year 2013.

by research teams through fiscal year 2014, see Appendix B.1 to B.5. Included in total expenditures, universities have also spent USTAR funds on other costs which will be discussed later in this chapter.

## **USTAR Should Clarify Expectations For Research Team Funding**

USTAR has not clearly established how performance of research teams should be evaluated as either successful or unsuccessful. First, the metrics routinely reported by research teams of their activities and outcomes need to be better defined. When possible, expectations or standards should be established. Second, USTAR has not established an adequate system to identify and report commercialization revenue. In particular, the boundaries of USTAR projects need to be defined to make sure revenues are correctly counted. We are concerned that USTAR has not ensured a clear pathway to receive its full share of the commercialization revenues it is entitled to by statute.

### **USTAR Should Require Routine Reporting of Metrics and Create Performance Standards**

USTAR has established some metrics and reporting requirements for research teams in annual contracts with universities. But, USTAR should outline all metrics to be tracked, clearly define them, and set performance standards expected to be achieved. The language in USTAR's fiscal year 2013 contract with the U of U, which is similar to its contract with USU, states:

... the faculty recruited through USTAR are required ... to pursue commercialization opportunities in a timely manner... Faculty are to report progress toward these goals on an annual basis to the USTAR Governing Authority [GA], and to provide information to USTAR management semi-annually on a variety of metrics including extramural funding, research breakthroughs, and IP [intellectual property] activities.

Although its contracts specify routine reporting requirements of researchers' outcomes, USTAR has not established a formal process through which universities report metrics semi-annually. USTAR should enforce routine performance metric reporting.

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**USTAR has established some performance metrics for research teams in contracts with universities.**

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**USTAR has not enforced semi-annual reporting of research team performance metrics.**

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**USTAR has not clearly defined all performance metrics to be tracked or how they will be benchmarked to determine success or failure.**

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In addition to formalizing the routine reporting of metrics, USTAR should more clearly define all metrics that should be tracked. For example, as discussed in Chapter II, USTAR reported to the Legislature some performance metrics for its program (such as jobs created) that were not specified in its contracts. If additional metrics such as jobs or companies created are counted, a consistent methodology should be developed. Similarly, clear definitions of the metrics mentioned in contract are needed. Even extramural funding, which seems to be the most clear of the metrics, may not be consistently reported. In some cases, reported amounts have not been limited to USTAR researcher awards; affiliate awards have also been included.

Furthermore, USTAR has not defined how reported metrics, such as extramural funding and intellectual property (IP) activities, will be benchmarked to determine performance. While expectations for some metrics, such as research breakthroughs, may be difficult to benchmark, standards should be set when possible. To illustrate, the chair of the GA explained that it is understood that researchers are to bring in more and more grant funding, but agreed that this expectation is not written. It is also unclear how USTAR will measure “commercialization in a timely manner.”

### **USTAR Should Enforce Administrative Rule For Commercialization Revenue Reporting**

*Utah Code* 63M-2-204 defines how commercialization revenues from USTAR projects will be distributed between USTAR and research universities.<sup>4</sup> Also, *Administrative Rule* R856-2-4 requires the U of U and USU to “report commercialization revenues to the USTAR executive director on an annual basis forty-five days after the end of the fiscal year.” However, when we asked USTAR management for copies of its revenue reports for our review, they

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<sup>4</sup> Commercialization revenue is distributed as follows: The first \$10 million is distributed proportionally to the university that conducted the research. The next \$5 million is allocated to the Governor’s Office of Economic Development (GOED) for the Technology Commercialization and Innovation Program (TCIP). With any revenue generated beyond the first \$15 million, 50 percent of the revenue goes proportionally to the university that conducted the research and 50 percent is shared with USTAR.



were unable to provide documentation. They stated that the USTAR research teams have not yet generated commercialization revenue.

However, university administrators have not reported commercialization revenues to USTAR management because they have never been asked to report it. As mentioned in Chapter II, USU research teams have actually generated about \$33,000 in commercial revenues that should be reported to USTAR management. We are concerned that USTAR has not been careful to follow and enforce existing administrative rule for commercialization revenue reporting, resulting in a lack of understanding of how much revenue has been generated by research teams. USTAR should carefully track this information to ensure revenue distribution and sharing is performed correctly.

### **USTAR Should Clarify the Definition of Its Projects for Revenue-Sharing Purposes**

USTAR’s statute, *Utah Code* 63M-2-102(1), defines commercialization revenues as “dividends, realized capital gains, license fees, royalty fees, and other revenue received by a university as a result of commercial applications developed from the *project* [emphasis added]...” However, USTAR has not clarified how a project is defined.

Thus, we are concerned that USTAR has not protected its claim on potential future commercialization revenues by outlining when it qualifies for a share in potential revenue and how revenue will be counted. Following, we have outlined four specific scenarios that illustrate our concern:

1. It is unclear how indirect benefits from USTAR support could impact revenue sharing. For example, in addition to assisting U of U researchers directly through financial support, USTAR has also funded the acquisition of equipment that is available to both USTAR and non-USTAR researchers. Should USTAR expect a share from the commercialization revenues of non-USTAR faculty that benefit from equipment purchased with USTAR funds?
2. It is unclear how collaboration between researchers could impact revenue sharing. For example, USTAR-funded

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**By not enforcing reporting requirements, USTAR has a lack of understanding of the amount of commercialization revenue that has been generated by research teams.**

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**USTAR has not defined what constitutes a “project” or when it qualifies to share in commercialization revenue.**

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researchers often collaborate on a project with non-USTAR partners. If this collaboration leads to a commercialized technology, what should USTAR's share of revenues be in light of the efforts of the non-USTAR-funded partners? USU's USTAR program is currently structured to focus on enhancing the collaboration of non-USTAR faculty (called affiliates) with USTAR-funded researchers. How should USTAR's commercialization revenue share from collaborative projects be counted?

3. It is unclear how the timing of commercialization revenue generation could impact revenue sharing. For example, USTAR may financially support a new researcher for only the first few years of his or her employment at a university. Yet, suppose that, within another few years, the researcher commercializes a profitable technology. Should USTAR still share commercialization revenues produced by that researcher even though USTAR's financial support previously expired?
4. It is unclear how intellectual property (IP) that originates outside university networks could impact revenue sharing. For example, university officials report that the IP for clean coke technology was donated to USU by an external source and they are currently working to create a proof-of-concept production process with USTAR funds. Thus, depending on the level of university ownership of IP that originated outside university networks, how should USTAR's share of commercialization revenue be counted?

The four scenarios described are not an exhaustive list of the complexities that could arise between USTAR and the research universities when commercialization revenues are generated. However, they help explain why USTAR needs to clarify how a USTAR project will be defined, when it qualifies for a stake in potential revenue, and how revenue will be counted.

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**University officials indicate that USTAR has not clarified the definition of its projects.**

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When we asked U of U and USU administrators how a USTAR project is defined, they cited the provisions of the USTAR financial participation agreement found in statute and acknowledged that no additional clarity has been put in place. The administrator from USU said, "There is nothing codified which defines the project. The

Governing Authority has not given any specific guidelines as to what constitutes the project.”

In addition, the President of the U of U stated in a letter to USTAR that research contributions by non-USTAR faculty to work associated with a USTAR researcher can be counted in USTAR performance metrics, but any revenue generated by the non-USTAR-funded faculty would not be subject to revenue sharing. To date, the U of U has not submitted affiliate data, but USU has. We question how work done by non-USTAR faculty could be counted in USTAR’s performance outcomes when revenue resulting from that work is not also subject to revenue sharing. We also question when USTAR qualifies for a share of commercialization revenue from a project that uses any combination of USTAR funding, facilities, and equipment.

Inasmuch as commercialization revenue was a significant consideration when USTAR was initiated, we think USTAR should very clearly define in writing how such revenues are to be counted and enforce requirements for routine reporting. Otherwise, commercialization revenue may not be counted correctly and shared appropriately.

## **USTAR Should Ensure that Budgetary Practices Provide Adequate Oversight of Research Funds**

Through administrative rulemaking authority, USTAR has implemented research team funding procedures. However, USTAR has not complied with its own rules for budget approval and fund allocation. As a result, USTAR does not have a clear and defined understanding of its financial commitments. In addition, allocations to research teams have been used to cover costs beyond researcher activities, sometimes without GA approval. We are concerned that these uses may be a departure from USTAR’s mandate.

### **USTAR Should Follow Budget Allocation Rules**

USTAR has established administrative rules for releasing funds to university research teams. These rules require approval of a preliminary “pro forma program budget” for each research team

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**USTAR should clarify how its projects are defined to ensure commercialization revenue is shared appropriately.**

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before initial funds are released and a “detailed program budget” before remaining funds are released. Following the established rules is important to ensure USTAR management has a clear understanding of the financial commitments to research teams.

*Utah Code* 63M-2-302(1)(f) states that USTAR shall “make rules for allocating money appropriated to it for research teams...” USTAR’s GA implemented *Administrative Rule* R856-1, outlining the process by which funds will be approved for release, which states:

10% of program money is released for Utah Science Technology and Research innovation team when initial position is considered necessary and approved for by the governing authority. Total amount of program money is determined by *pro forma program budget* [emphasis added] approved by the governing authority...

The remaining 90% of program money is eligible for release to Utah Science Technology and Research innovation team when a memorandum of understanding of first team hire is presented to the governing authority and the *detailed program budget* [emphasis added] is deemed to be within the guidelines of the governing authority.

Rule defines a program budget as “the budget proposed by each Utah Science Technology and Research innovation team and approved by the Utah Science Technology and Research Governing Authority...”

We conducted a review of USTAR’s documentation to determine if there is a record of both pro forma and detailed program budget approval. Although we did find some record that the U of U and USU prepared proposals for individual research teams which typically included pro forma budget estimates, USTAR was unable to provide documentation for detailed program budgets. Also, it is unclear if the GA consistently followed the process to release funding to research teams. As will be discussed more in Chapter VI, USTAR’s GA meeting minutes do not fully record how decisions were made.

For example, of the 20 research teams that USTAR is budgeted to fund in fiscal year 2014, we only found record in the minutes of three teams for which pro forma budgets were approved. Of these three

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**USTAR has not followed its *Administrative Rule* for research team budget approval.**

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teams, only two received funds that reflected 10 percent of their initial budgets as proposed by university officials. Also, we were unable to find any record in the minutes that detailed program budgets were ever approved by the GA for individual research teams. USTAR should adhere to funding allocation procedures for research teams as outlined in administrative rule.

### **USTAR Management Should Have a Clear Understanding of Commitments to Research Teams**

Based on the budget allocation rule discussed above, it appears that research teams were intended to be approved to receive a defined amount of USTAR financial support. In addition, many USTAR and university officials stated to us that the original idea of USTAR research funding was to financially support researchers for a five-year startup period. However, USTAR staff could not tell us the extent of existing financial commitments. Instead, we had to work with university administrators to obtain that information. One surprising result is that in some instances, research teams are expecting ongoing salary support from USTAR.

It does not appear that the intent of USTAR was to fund researchers on an ongoing basis. Instead, after a researcher's USTAR startup packages are spent, USTAR appropriations should be reallocated to fund new research teams. However, many U of U research teams are expecting ongoing salary support. For example, a U of U administrator indicated that, after startup funds are spent, one research team has been promised \$650,000 annually for ongoing salary support from USTAR allocations.

When we asked a number of GA members about ongoing salary support for researchers, all stated that this was either never the intent of the USTAR initiative or was a change to the original idea. However, USTAR management has not tracked salary or other research team funding commitments. In fact, USTAR's financial manager indicated to us that research team funds are not tracked according to a defined amount; but instead, allocations are budgeted each year based on university expectations.

In response to the GA's concern about existing commitments, the U of U has presented some thoughts on limiting ongoing salary commitments in the future. During a June 2013 proposal for three

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**Universities have an expectation for ongoing salary support of research teams.**

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**USTAR officials stated that ongoing salary support of research teams was not the original intent of the initiative.**

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**USTAR and university officials are currently working to clarify financial commitments to research teams.**

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new health science research teams at the U of U, a school representative emphasized to the GA that ongoing salary commitments would not be sought after as part of the requested funding for these new teams. Thus, after the five-year startup phase for this proposal, USTAR funds would be available for reinvestment to other new research teams.

The USTAR GA is also trying to clarify its existing financial commitments. In a recent letter to the chair of the GA, the President of the U of U wrote, “We recognize the time has come when it may be in everyone’s best interest to change the understandings we have had about the USTAR program.” The letter went on to itemize ongoing salary commitments and other issues of concern. As the GA reviews ongoing funding concerns with the universities, USTAR management should ensure it is supplied with adequate financial information to facilitate clear understanding and control of financial commitments.

### **Some Research Monies Have Not Been Applied to Research Team Activities**

As we conducted a financial review of USTAR, we discovered that a significant portion of funds allocated for university research teams is not being applied to individual research team expenses. Also, some uses of funds were not approved by the GA. The use of research team funds for purposes other than supporting USTAR researcher activities may go beyond USTAR’s statutory mandate, especially without prior GA approval. We question the use of research team funds for non-research team activities, especially since *Utah Code* 63M-2-203 states that USTAR shall appropriate money to USU and the U of U “to provide funding for research teams to conduct science and technology research.” To illustrate, the following are a few examples of USTAR spending at USU and the U of U that go beyond individual research activities.

**USTAR Monies Support USU Commercial Enterprises Administrators.** USU currently uses USTAR research dollars to fund the majority of the salaries and benefits of five business development directors in its Commercial Enterprises office. These directors are tasked with seeking out new project opportunities in addition to commercialization work for USTAR and non-USTAR researchers. In total, USU reports USTAR expenditures for its Commercial

Enterprises office at about \$2.1 million through fiscal year 2013. When we asked GA members about this practice, a number stated they were unaware of it and expressed concern about the use of USTAR funds to support administrators rather than researchers.

**USTAR Funds Are Supporting an Existing University Project Not Affiliated with USTAR Research Teams.** USU officials report the use of \$2.2 million in USTAR funds through fiscal year 2013 to commercialize the university's weather sensor technology initially funded by NASA. Also, support for the project is estimated to be \$700,000 in fiscal year 2014. However, the STORM program does not have leadership from a USTAR research team, but is instead managed by existing non-USTAR faculty. Since USTAR's intent is to fund new research teams, we question the use of USTAR funds to support existing university projects or projects without USTAR researcher leadership.

**USTAR Funds Have Supported a Non-USTAR Project at the U of U.** Without GA approval, USTAR management committed to allocate a significant amount of matching funds to the U of U to secure a large federal grant from the National Science Foundation. Through fiscal year 2013, total USTAR expenditures for this commitment were about \$3.8 million. USTAR's executive director reports its matching funds were used to purchase equipment for its building at the U of U but has not independently confirmed this. However, the overall project is not affiliated with USTAR. This example will be discussed more in Chapter VI.

**USTAR Has Supported an Existing Student Program at the U of U.** Called the Bench-to-Bedside program and unaffiliated with USTAR, this U of U program joins students and faculty into teams aimed at producing medical device prototypes. When asked to help support the program, the USTAR GA declined to allocate new funds to sponsor the program, but approved the use of existing USTAR research team dollars. In total, about \$120,000 in research funds were supplied to the program.

**USTAR Supported a Commercialization Effort that Is Now Closed.** The GA approved the one-time allocation of \$500,000 in fiscal year 2011 to help the U of U's Technology Commercialization Office begin a business incubator. However, during our audit, it was

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**USTAR's research team funding is being used to pay for other projects and costs. We question if these uses of funds may go beyond USTAR's intent.**

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**USTAR should review the use of research team funding to ensure it is appropriate and aligns with legislative intent.**

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announced in a public GA meeting that the U of U will be closing the incubator due to a lack of profitability and the high rental cost of office space in Research Park.

In conclusion, the use of research team funds for programs beyond researchers' activities appears to be a departure from USTAR's original intent. Such expenditures are a concern because they reduce the funds available for research teams. USTAR should review the use of research team funding to ensure that such use aligns with legislative intent and only covers non-team expenditures that are specifically approved by the GA.

## **Recommendations**

1. We recommend that USTAR clarify and formalize required reports from research teams, including:
  - a. Ensuring that reports required by Governing Authority *Administrative Rule*, contract, or policy are received.
  - b. Specifying what metrics research teams must report and how they are defined.
  - c. Where possible, establishing benchmarks or expected performance levels for metrics that research teams are expected to achieve.
2. We recommend that USTAR clarify and formalize required reports from universities, including:
  - a. Ensuring that annual reports of commercialization revenue required by Governing Authority *Administrative Rule* are received.
  - b. Clarifying in *Administrative Rule* how a USTAR project should be defined to ensure that commercialization revenue is appropriately distributed.



3. We recommend that USTAR review the approval and use of research team funding by universities to ensure that:
  - a. Research team program budgets required by *Administrative Rule* are received and approved by the Governing Authority before funds are released.
  - b. Future commitments to fund USTAR faculty salaries are understood and documented.
  - c. Expenditures comply with legislative intent to fund USTAR research teams and only cover non-team expenditures that are specifically approved by the Governing Authority.

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## Chapter IV

# USTAR Management Has Not Sufficiently Overseen Research Buildings

We reviewed USTAR's implementation of its statutory mandate to construct research facilities at the University of Utah (U of U) and Utah State University (USU). While USTAR has accomplished the design and construction of these two research facilities, our review concluded that USTAR has not sufficiently overseen the management of its research buildings. Specifically, we found that USTAR:

- Did not implement lease agreements with university officials before research faculty took up occupancy. To date, lease agreements have still not been executed, even though USTAR's USU and U of U facilities were put into service in September 2010 and April 2012, respectively.
- Has not clarified responsibility for the operations and maintenance (O&M) costs of its facilities. This omission has resulted in the use of USTAR's research team funds to cover the majority of O&M expenses. This also resulted in inconsistent contribution levels from the U of U and USU toward USTAR buildings' O&M costs.
- Failed to budget for sales tax requirements associated with the construction costs of its research facilities. This error has delayed completion and operation of the nanofabrication laboratory at USTAR's U of U facility.

### State Bonds Funded the Majority Of USTAR's Research Facilities

In conjunction with USTAR's statutory mandate to fund the hiring of university research teams as we discussed in Chapter III, *Utah Code* 63M-2-201 outlines that the Governing Authority (GA) shall construct research facilities at the U of U and USU for research teams to conduct science and technology research.

Statute also dictates that each university will provide the land for construction of the buildings on their campuses, but that the USTAR

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**USTAR should execute facility lease agreements with universities and include terms specifying O&M obligations.**

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GA shall hold title to the research buildings. The USTAR facility constructed at USU is called the USTAR BioInnovations Center and was completed and put into service in September 2010. The USTAR facility constructed at the U of U is called the James L. Sorenson Molecular Biotechnology Building and was completed and put into service in April 2012.

In total, the two research facilities cost about \$225 million to construct (including both state- and university-funded portions).

- The USTAR USU facility cost about \$60 million in total, with the state funding the entire amount. USU was required to contribute \$10 million to the project, but instead of applying funds to the new building, it met the requirement by donating an existing building to USTAR. USTAR has a contract with USU for the transfer of this donated building's ownership on December 1, 2017, when it will be free of all encumbrances. In February 2007, the Legislature's Executive Appropriations Committee approved the donation of the building as meeting the \$10 million contribution requirement.
- The USTAR U of U facility cost about \$165 million in total, with the state's portion equaling about \$101 million. The U of U was required to contribute \$30 million to the project. However, due to additional infrastructure needs in areas surrounding the construction site, the U of U contributed an additional \$34 million to the project.

To fund its portion of the two USTAR facilities, the Legislature authorized the use of general obligation (GO) bonds. These bonds are not the responsibility of USTAR, but are serviced by the state and are scheduled to be paid off in fiscal year 2017. Including both principal and interest, the state will spend just over \$166.5 million to pay off the bonds.

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**USTAR's new facilities at the U of U and USU cost about \$225 million to construct. The state paid the majority of the cost by issuing general obligation bonds.**

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## USTAR Management Should Establish Lease Agreements with Universities

USTAR should put lease agreements in place to clarify conditions and expectations for building occupancy. As owner of the USTAR research buildings at the U of U and USU, *Utah Code* 63M-2-201(5) states, “The governing authority may: (a) lease the buildings to Utah State University and the University of Utah...” However, USTAR did not execute lease agreements with university officials before faculty took up occupancy, and lease agreements are still not in place. Currently, the USTAR-owned research facilities house both USTAR and non-USTAR university faculty, and USTAR does not receive lease payments from building occupants.

The State Auditor’s office released a report of university buildings for the fiscal year ended June 30, 2012. In the management letter from *Report No. 12-32* to USTAR, the State Auditor indicates:

Because of the lack of formal agreements, it is unclear what rights, responsibilities, and obligations USTAR and the universities have related to the facilities. It is also unclear who owns and should account for the facilities... We recommend that USTAR establish formal agreements with Utah State University and the University of Utah which clarify the rights, responsibilities, obligations, ownership, and accounting related to the research facilities at each university.

USTAR officials responded to the State Auditor’s report that they had established a timeline to have an agreement in place by the end of March 31, 2013 and ensured the State Auditor’s office an opportunity to review the final draft agreement before it was signed. GA meeting minutes also show that a discussion of the State Auditor’s findings occurred in November 2012. However, USTAR did not meet the March 2013 deadline.

In addition, we held discussions with Division of Facilities Construction and Management (DFCM) officials and their legal counsel from the Attorney General’s office. They stated that USTAR is an independent agency that directly holds title for its buildings and should have lease agreements in place with facility occupants.

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**USTAR did not execute lease agreements with universities before occupancy occurred.**

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**The State Auditor recommended that USTAR establish lease agreements for its facilities. However, lease agreements with universities are still not in place.**

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## USTAR Should Clarify Research Building O&M Responsibilities

An important item USTAR's lease agreements should address is responsibility for facility operations and maintenance (O&M) costs. O&M includes costs such as utilities, custodial services, and routine maintenance to meet the needs of building occupants. During the audit, we found USTAR's research team funds are being used to pay the majority of the O&M expenses. We also found inconsistencies in how universities are contributing to USTAR's O&M obligations.

A potential source of funds to pay for USTAR's facility O&M costs is extramural funding obtained by USTAR researchers. As discussed in Chapter II, USTAR-funded researchers generate a significant amount of funding from federal grants. These federal grants help fund the researchers' work and generally include additional funds awarded to pay for associated facilities and administrative (F&A) costs, which include O&M.

USTAR's enabling legislation supports the concept that university F&A funds could be used to pay for its facility expenses. *Utah Code* 63M-2-201(5)(b) states that: "The Governing Authority may...require research teams to generate certain amounts of revenue from grants or other sources to contribute to the project...." However, USTAR has not required universities to use their USTAR-related F&A funds to help pay for facility costs. Instead, over \$5.7 million of state-appropriated USTAR research team funds were used to pay for facility O&M expenses between fiscal year 2008 and 2013. In addition, there are inconsistencies in the level of contribution the U of U and USU provide to USTAR for O&M. Figure 4.1 outlines how USTAR facility O&M expenses were paid.

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**Utah Code indicates that USTAR can require research teams to contribute to facility costs through grant funds. Yet, USTAR's allocations to universities are being used to cover the majority of O&M expenses.**

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**Figure 4.1 Universities Contribute Inconsistent Levels of Support to USTAR’s O&M Costs.** Between fiscal year 2008 and 2013, USTAR research team funds were used to cover the majority of facility O&M costs (about \$5.7 million of total costs of \$7.3 million). USU paid for about 42 percent of its USTAR facility O&M while the U of U has not contributed to its USTAR facility expenses.

Fiscal Year	USTAR Facility at the U of U		USTAR Facilities at USU	
	USTAR-paid Portion	U of U-paid Portion	USTAR-paid Portion	USU-paid Portion
2008	-	-	195,322	0
2009	-	-	204,682	0
2010	-	-	200,275	0
2011	-	-	558,367	142,028
2012	1,743,711	0	678,416	341,052
2013	1,833,830	0	309,750	1,090,290
<b>Total</b>	<b>\$3,577,541</b>	<b>\$0</b>	<b>\$2,146,812</b>	<b>\$1,573,370</b>

Source: USTAR

Note 1: The USTAR facility at the U of U was not completed until fiscal year 2012. U of U officials report that the reason for the high O&M costs for fiscal year 2012 is related to significant startup (equipment) costs for the building for which the U of U used USTAR dollars.

Note 2: USU’s reported O&M costs for fiscal year 2008 to 2010 are only for the donated building. O&M costs for fiscal year 2011 to 2013 are for both the donated building and the new USTAR facility that was completed in September 2010.

As Figure 4.1 shows, the majority of USTAR facility O&M costs have been paid through USTAR research team funds. This figure also shows that the U of U and USU contribute different levels of support to USTAR’s O&M expenses.

For example, in fiscal year 2013, all O&M expenses of the U of U USTAR facility were paid with USTAR research team funds. In contrast, research team funds were only used to pay 22 percent of the USTAR facility O&M costs at USU in that same year. Also, beginning in fiscal year 2014, USU officials have committed to pay all of the USTAR building O&M costs while the U of U is anticipating USTAR research funds will continue to cover \$1.7 million in O&M expenses each year. U of U officials have stated they will pay the remaining O&M costs above \$1.7 million.

Lease agreements could clarify whether F&A funds should pay for building O&M costs. It is important to note that USU’s USTAR budget indicates that its paid portion of O&M costs between fiscal year 2011 and 2013 was paid from researchers’ F&A grant revenue. A USU official confirmed O&M is paid through F&A revenue as well as some other funds. In contrast, the U of U’s USTAR budget does not report any contributions to USTAR O&M costs from F&A grant revenue.

**The U of U and USU are contributing inconsistent levels of support to USTAR facilities’ O&M costs.**

**USU has been contributing to USTAR O&M through grant revenue, but the U of U has not.**

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**Instead of being applied to USTAR facility O&M costs, grant revenue from the U of U's USTAR researchers is being applied to the university's construction costs.**

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U of U officials report that available F&A funds from USTAR researchers (currently estimated at about \$1 million annually) are being used to pay for a university bond. The bond was obtained to expand infrastructure needed for the USTAR building and other buildings to be constructed in the area that was formerly the university's golf course. Thus, F&A funds are being directed to construction costs rather than O&M.

In the absence of USTAR lease agreements that clarify O&M responsibilities, expectations may change over time. For example, in early 2008, before the construction of the USTAR building, U of U officials sent a memorandum to faculty and staff indicating that a portion of F&A funds would be used to pay for USTAR facility O&M expenses when the building was completed. Similarly, during fieldwork for our 2011 audit on university O&M issues, we were told that F&A funds would be used for the USTAR building O&M. However, through fiscal year 2013, O&M costs have been paid through USTAR research team allocations.

### **USTAR's Planning Error Left Its U of U Research Facility Incomplete**

Under Utah statute, the construction of the two USTAR research facilities did not qualify for a sales tax exemption on the projects' construction materials. However, USTAR, in coordination with its construction planning partners, did not budget for sales tax requirements during facility construction. USTAR and university officials report this error impacted the level of completion of the U of U facility's nanofabrication laboratory, delaying its availability for use by research teams.

*Utah Code 59-12-104(2)(a)* indicates that the only state construction projects that are exempt from sales tax on construction materials are *(i)* those on behalf of the public education system, and *(ii)* those that are conducted by "employees of the state, its institutions, or its political subdivisions..." In contrast, the construction of the USTAR facilities was on behalf of a state initiative and was completed by private contractors. Thus, USTAR was not exempt from sales taxes on construction materials and appropriately paid the taxes.

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**The construction of the USTAR facilities at the U of U and USU did not qualify for sales tax exemptions. Taxes were appropriately paid on construction materials.**

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However, during the audit, USTAR and U of U officials reported that the payment of sales taxes (estimated at a minimum of \$3 million) caused the project to go over budget, which required cost-cutting measures. Specifically, officials indicated that the U of U building's nanofabrication laboratory was unable to be fully completed by the opening of the facility in April 2012 because of insufficient funds due to the tax issue and design flaws. We toured the U of U facility in April 2013 and observed that the space continues to be mostly empty and non-operational. In the September 2013 USTAR GA meeting, it was reported that the nanofabrication laboratory is anticipated to be fully operational sometime during the summer of 2014.

It remains unclear why USTAR and its construction partners did not budget for sales tax requirements on construction costs for the U of U building since this issue was also encountered during its USU facility's construction. Construction of the USTAR building at USU commenced several years before the project at the U of U. We reviewed USTAR's GA meeting minutes and found that the sales tax issue with the USTAR building construction at USU was discussed as early as May 2009. It was recorded in the minutes that an additional \$1.8 million would be allocated to taxes on construction materials at USU unless USTAR obtained federal 501(c)(3) non-profit tax-exempt status. Thus, USTAR should have been fully aware of, and budgeted for, sales tax liabilities during the construction of its facility at the U of U.

However, as reported by USTAR and U of U officials, USTAR and its construction planning partners did not budget for sales tax liabilities associated with the construction projects funded under the USTAR initiative. Thus, tax payments ultimately reduced the amount of funds available to finish the nanofabrication laboratory at the U of U facility as it was originally planned and budgeted.

## Recommendation

1. We recommend that USTAR establish lease agreements with the University of Utah and Utah State University for the occupancy and use of its facilities, including responsibility for payment of O&M costs.

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**USTAR and U of U officials report the payment of taxes on building construction resulted in the inability to complete the nanofabrication laboratory. It is still incomplete and unoccupied.**

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**Having previously addressed tax issues during the USU facility construction, USTAR should have known to properly budget for tax requirements on the U of U facility construction.**

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## **Chapter V**

# **USTAR’s Management of Outreach Can Improve**

USTAR management can improve guidance to the outreach program by improving contracts and developing administrative rules or policies for the Governing Authority (GA) to approve. Rules and policy are needed to clarify how outreach directors track and report performance. Additionally, USTAR’s outreach program may be in violation of legislative intent because they exceed statutory limitations on locations and fund programs that statute is silent on. Therefore, the GA should ensure currently funded programs are in compliance with legislative intent.

### **Significant Public Funding Goes Toward USTAR’s Outreach Program**

USTAR’s Technology Outreach and Innovation Program (TOIP), referred to as outreach in this chapter, includes four outreach regions and additional outreach-related programs that are not part of the outreach regions. The four regions work with entrepreneurs, emerging and established businesses, academic researchers, and other stakeholders across the state to assist “in expanding the transfer of new technologies or improved technologies from state universities to existing companies.” Expenditures for the outreach regions can be seen in Figure 5.1. The additional outreach-related programs include business incubation, student education, federal funding support, and the creation of a grant program. Expenditures for these additional outreach programs or initiatives can be seen in Figure 5.2 (discussed later in this chapter).

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**USTAR management can improve guidance to the outreach programs by developing better contracts as well as the development of administrative rules or policies and procedures.**

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**USTAR’s Technology Outreach and Innovation Program (TOIP) includes four outreach regions and additional outreach-related programs that are not part of the outreach regions.**

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**More than \$9 million in public funding has gone into USTAR's outreach regions since fiscal year 2008.**

**Figure 5.1 USTAR's Technology Outreach and Innovation Program Expenditures by Year Are Significant and Have Exceeded \$9 million Since Fiscal Year 2008.** USTAR's outreach program currently includes four outreach regions; up to five are permissible in statute.

Fiscal Year	TOIP Southern Utah	TOIP Eastern Utah	TOIP Central Utah	TOIP Northern Utah	TOIP SLCC Utah	Total Expenditures
2008	\$300,591	\$298,597	\$233,078	\$475,693	\$243,804	\$1,551,763
2009	402,805	347,691	359,956	487,719	286,542	1,884,713
2010	282,669	378,524	411,303	314,009	-	1,386,505
2011	309,182	364,345	383,285	327,386	-	1,384,198
2012	305,530	380,508	336,358	329,777	-	1,352,173
2013	362,057	262,019	527,665	449,785	-	1,601,526
<b>Total</b>	<b>\$1,962,834</b>	<b>\$2,031,684</b>	<b>\$2,251,645</b>	<b>\$2,384,369</b>	<b>\$530,346</b>	<b>\$9,160,878</b>

Figure 5.1 shows that more than \$9 million in public funding has gone into USTAR's outreach regions since fiscal year 2008, as also shown in Appendix B.2. With significant public funding devoted to outreach, USTAR management has a responsibility to ensure that funds are used efficiently and effectively. This chapter contains recommendations for improving the management of USTAR's outreach programs.

### **Improved Guidance for Outreach Regions Is Needed**

To improve oversight, USTAR management needs to enhance their contracts with outreach programs and clarify performance expectations in administrative rules or policies and procedures. The lack of guidance by USTAR management has resulted in outreach directors being unclear about how to track and report performance.

#### **Contracts Between USTAR and Outreach Need to Improve**

USTAR management needs to provide clear expectations in outreach contracts and ensure that contracts are up to date. USTAR maintains contracts with the outreach regions and initiatives. Some of these contracts outline performance standards or expectations that outreach programs are expected to meet, but one region's contract does not. We also found that one of the outreach initiatives, the Bio-innovation Gateway (BiG), does not have a current contract with

**USTAR's management needs to provide clear expectations in outreach contracts and ensure that contracts are up to date.**

USTAR even though USTAR is funding the initiative. USTAR has continued to fund this initiative without a current contract in place. The agreement between BiG and USTAR expired over two years ago on June 30, 2011.

### **Administrative Rules or Policies and Procedures Needed for Outreach Program**

*Utah Code* provides broad guidance for USTAR's outreach program, but additional clarity from USTAR administrators through administrative rules or policies and procedures regarding operational expectations, performance standards, and accountability are needed.

Currently, the only guidance is found in *Utah Code* 63M-2-202(2), which states that the technology outreach program acts as a resource to:

- (i) broker ideas, new technologies, and services to entrepreneurs and businesses throughout a defined service area;
- (ii) engage local entrepreneurs and professors at applied technology centers, colleges, and universities by connecting them to Utah's research universities;
- (iii) screen business ideas and new technologies to ensure that the ones with the highest growth potential receive the most targeted services and attention;
- (iv) connect market ideas and technologies in new or existing businesses or industries or in regional colleges and universities with the expertise of Utah's research universities;
- (v) assist businesses, applied technology centers, colleges, and universities in developing commercial applications for their research; and
- (vi) disseminate and share discoveries and technologies emanating from Utah's research universities to local

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**Statute provides broad guidance for USTAR's outreach program, but additional clarity regarding operational expectations, performance standards, and accountability are needed.**

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entrepreneurs, businesses, applied technology centers, colleges, and universities.

These broad statutory directives help to guide outreach program objectives, but additional clarity through administrative rules or policies and procedures is needed. As one outreach director stated, *Utah Code* provides objectives to follow, but USTAR administrators need to “determine how to measure outputs for these objectives, create a baseline, and create goals from the baseline created.”

According to the Division of Administrative Rules, “an administrative rule is an agency’s written statement that has the effect of law. Agencies write administrative rules to implement or interpret state or federal legal mandates.” It is difficult to evaluate the efficiency or effectiveness of outreach work without clear expectations established through administrative rules or policies and procedures. As a result, directors are unclear about tracking and reporting performance expectations.

### **Outreach Directors Are Unclear About How to Track and Report Performance**

We spoke with representatives from all four outreach regions, including three outreach directors and one associate director, regarding their understanding of performance expectations from USTAR management. These discussions, along with our test of the top job-generating companies, as discussed in Chapter II, indicate a clear lack of guidance from USTAR management about how to count performance outcomes.

We asked the outreach directors to describe how their outreach program fulfilled their statutory objectives. The directors responded by describing a variety of programs and outreach efforts that they have initiated within their regions. The variety of responses reflects regional differences and strengths, but also indicates a lack of clarity about the expectations for performance. We also asked outreach directors to describe the metrics currently in place to determine the effectiveness of their outreach program. One regional director stated that they are judged on their ability to meet their fundraising and job creation goals. Another regional director stated that USTAR program measures vary from region to region, adding that the same measures and reporting structure should be used by each outreach region.

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**Discussions with outreach representatives indicate a lack of guidance from USTAR management about how to count performance outcomes.**

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We were told that, in general, there has not been sufficient guidance regarding performance metrics and that USTAR management has changed their expectations each year, which has resulted in difficulties with determining the relative success of each outreach program. Directors also expressed concerns with how to count important metrics such as number of jobs created and companies assisted. By developing administrative rules or policies and procedures, USTAR administrators could help outreach regions benchmark their performance and ensure that performance metrics are counted consistently across regions.

## **USTAR Should Ensure Outreach Is Consistent with Legislative Intent**

While various outreach related programs and initiatives serve worthy purposes, we are concerned that these programs and initiatives may move USTAR’s outreach program away from the legislative intent of the program. *Utah Code 63M-2-202(1)* states:

As funding becomes available from the Legislature or other sources, the Utah Science Technology and Research Governing Authority created in Part 3 shall establish a technology outreach program at *up to five* [emphasis added] locations distributed throughout Utah.

USTAR is currently funding four Technology Outreach and Innovation Programs (TOIPs) at the following locations:

- Utah State University Vernal Campus (eastern region)
- Weber State University (northern region)
- Utah Valley University (central region), and
- Dixie State University (southern region), with a satellite location in Cedar City.

In addition to these TOIPs, USTAR administrators have elected to fund, exclusively or in part, outreach programs as shown in Figure 5.2 (see Appendix B.2 to B.3). It is unclear if the Legislature ever intended for USTAR’s administrators to act as an outreach program by funding various programs and initiatives not specified in statute.

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**Outreach related programs and initiatives may move USTAR’s outreach program away from the legislative intent of the program.**

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**It is unclear if the Legislature ever intended for USTAR’s administrators to act as an outreach program by funding various programs and initiatives not specified in statute.**

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**Figure 5.2 USTAR Has Invested \$4.8 Million in Outreach-Related Programs and Initiatives That Are Not Governed by Statute.** While these programs and initiatives may serve worthy purposes, it is unclear if they should be part of USTAR.

Fiscal Year	BioInnovations Gateway	SBIR/STTR Assistance Center	Technology Commercialization/ Go-To-Market Grants	Strategic Initiatives*	Total Expenditures
2008	-	-	-	\$1,142,573	\$1,142,573
2009	250,000	138,140	-	298,399	686,539
2010	12,497	168,148	267,380	166,839	614,864
2011	112,254	147,181	1,065,098	61,674	1,386,207
2012	258,237	140,386	242,895	-	641,518
2013	109,860	169,187	-	98,686	377,733
<b>Total</b>	<b>\$742,848</b>	<b>\$763,042</b>	<b>\$1,575,373</b>	<b>\$1,768,171</b>	<b>\$4,849,434</b>

\*Strategic initiatives include the following: Nano Institute and Technology Outreach Projects

**USTAR’s physical outreach locations have exceeded the statutory limit of five locations.**

**USTAR has provided almost \$370,000 to Bio-Innovations Gateway since June 30, 2011, without a current contract in place.**

Including the Bio-innovation Gateway (BiG) and the Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Assistance Center (SSAC) with the four outreach regions, USTAR’s physical locations have exceeded the statutory limit of five locations. It is also unclear if other initiatives such as the Go-To-Market grant program were ever part of the legislative intent for USTAR. The following material describes USTAR’s outreach-related programs:

- Bio-innovations Gateway (BiG) – Located within Granite School District, BiG offers research and laboratory space for businesses as a business “incubator” but also has a student educational component. The director of this program indicates positive results for the program in terms of business incubation but is unsure if the educational component fits within USTAR’s mission. USTAR spent about \$743,000 on this program from fiscal year 2009 to fiscal year 2013, using, in part, ARRA funds. As previously mentioned, BiG does not have a current contract with USTAR as its contract expired on June 30, 2011. USTAR has provided almost \$370,000 to BiG since its contract expired over two years ago.
- SBIR-STTR Assistance Center (SSAC) – Located at Salt lake Community College Miller Campus, SSAC helps small high-tech businesses and researchers access and win federal research



and development grants. USTAR spent about \$763,000 on this program from fiscal years 2009 to 2013.

- Go-To-Market (GTM) – USTAR is currently funding this grant program, which before fiscal year 2014 was called technology commercialization grants (TCG) when Federal American Recovery and Reinvestment Act (ARRA) funds were used to fund it. As shown in Appendix B.3, USTAR’s outreach centers were allocated roughly \$1.6 million in TCG grants from fiscal years 2010 to 2012. As noted in Chapter III, research universities received approximately \$2 million in TCG grants during the same time period, which were accounted for outside of outreach line items. In fiscal year 2014, the regional outreach centers are budgeted to receive \$340,000 in Go-To-Market grants. While this grant program does help researchers and home inventors alike, it is unclear if the Legislature ever intended USTAR dollars to be used as a grant program.
- Strategic Initiatives – Includes preliminary funding to start a Nano Institute at the U of U and various regional outreach programs that were funded under a separate line item.

Once compliance with legislative intent is established, USTAR needs to develop administrative rules or policies and procedures directing the operations of outreach to ensure proper and adequate oversight.

## Recommendations

1. We recommend that USTAR ensure that expectations are clear and metrics are established in up-to-date contracts and established rules or policies and procedures to evaluate outreach program performance.
2. We recommend that the Governing Authority ensure current outreach programs and initiatives are consistent with legislative intent.

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**While USTAR’s Go-To-Market grant program helps researchers and home inventors alike, it is unclear if the Legislature ever intended USTAR dollars to be used as a grant program.**

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## **Chapter VI**

# **USTAR Administration and Governance Of Operations Needs to Improve**

USTAR's administration and governance of operations needs to improve. This report has outlined a significant number of risks where clear direction through policies and procedures is needed. We believe that USTAR has been in operation long enough (since 2006) to have developed operating policies and procedures. To address administrative and governance issues, this chapter will discuss the following:

- Policies and procedures that need to be developed as well as policies that have been developed but have not been approved by the Governing Authority (GA)
- Noncompliance with the statutorily required appointment of the GA chair
- Noncompliance with the State's Open and Public Meetings Act

We believe that these issues are important because improved management will help the GA in their governance role.

### **Management Should Develop Policies and Procedures for Approval by Governing Authority**

USTAR management should develop policies and procedures to direct operations and these policies and procedures should be formally approved by the GA. The GA is the body charged with overseeing USTAR. We found USTAR lacks operating policies and procedures for a number of primary functions of the program. We also found USTAR management has developed some policies and procedures regarding internal accounting, but has failed to have the GA review and approve them. Finally, we believe that the USTAR GA should consider adopting a conflicts of interest policy.

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**This report has outlined a significant number of risks where clear direction through policies and procedures is needed.**

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**USTAR management should develop policies and procedure to direct operations; these policies and procedures should be formally approved by the Governing Authority.**

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## **Operating Policies and Procedures Should Be Developed**

USTAR management should develop operating policies and procedures for approval by the GA. While the following list may not be exhaustive, the development of these policies and procedures would assist the GA in its oversight role pertaining to critical functions of the USTAR program. Specifically, policies and procedures should be developed for research and outreach operations, for reporting and validating of performance outcomes, and for budgets.

**Policies and Procedures Are Needed for the Operations of Research Team Funding and Outreach/Initiatives.** Issues discussed in Chapters II, III, and V of this report illustrate the need for USTAR to develop operating policies and procedures for research team funding and outreach/initiatives. For example, it is unclear what eligibility criteria is being used and how effectiveness is measured for initiatives such as the now defunded University of Utah (U of U) incubator, the U of U bench-to-bedside program, and Bio-innovation Gateway (BiG). Another example would be USTAR's SBIR-STTR Assistance Center's (SSAC) failure to consistently charge a fee to the small businesses it assists. USTAR also funds a Go-to-Market grant program without any established guidelines. Another example is the need for USTAR management to track equipment purchased by university personnel with USTAR monies. Currently, USTAR management relies on university officials to track USTAR equipment.

**Policies and Procedures Are Needed for the Reporting and Validation of Performance Outcomes.** USTAR should institute policies and procedures relating to performance outcome reporting and validation. As discussed in Chapters III and V, USTAR programs and initiatives do not adequately report their performance outcomes. USTAR is also devoid of any mechanism to validate performance outcomes. We believe USTAR needs to implement policies and procedures that ensure performance outcomes are being properly reported and validated.

**Policies and Procedures Are Needed for the Establishment of And Potential Changes to Budgets.** USTAR should establish policies and procedures pertaining to budgets for both administration and research. As discussed in Chapter III, current budgetary practices of USTAR do not ensure adequate oversight.

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**It is unclear what eligibility criteria is being used and how effectiveness is measured for initiatives.**

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**USTAR should institute policies and procedures relating to performance outcome reporting and validation.**

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Additionally, a policy addressing budgets could have prevented a significant misunderstanding between USTAR and the U of U pertaining to funding from the National Science Foundation for Materials Research Science and Engineering Centers (MRSEC). USTAR's executive director signed a letter committing \$6.5 million to help the U of U secure a MRSEC grant, but the GA never approved this commitment. Regardless of the misinterpretations between officials at the U of U and USTAR's executive director, the GA never approved funds to be used on MRSEC. The executive director should not have issued a letter committing funding since this is something that only the GA can authorize. Policies and procedures addressing the establishment of and changes to budgets could have prevented this from happening.

Policies and procedures help to articulate operational expectations. According to the State's Division of Finance Internal Control Guide:

Controls are most frequently comprised of policies and procedures. After identifying and assessing risks, managers need to evaluate (and develop, when necessary) methods to minimize these risks. A policy establishes what should be done and serves as the basis for the procedures. Procedures describe specifically how the policy is to be implemented. It is important that an organization establish policies and procedures so that staff knows what is to be done and compliance can be properly evaluated.

We believe USTAR has been in operation long enough to have developed operating policies and procedures. Operating policies and procedures direct the program and clarify GA expectations for USTAR.

### **Developed Policies and Procedures Have Not Been Approved by the GA**

USTAR has a policy titled Internal Accounting Policies and Procedures which has not been presented to the GA for approval. We are concerned that USTAR management has granted themselves authority without the approval of the GA. Statute clearly rests the oversight of USTAR with the GA and the executive director serves at their pleasure.

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**A policy addressing budgets could have prevented a significant misunderstanding between USTAR and the U of U pertaining to funding Materials Research Science and Engineering Centers.**

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**USTAR has a policy titled, Internal Accounting Policies and Procedures which has not been presented to the GA for approval.**

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The internal accounting policies and procedures were established to define procurement practices as adopted by the State Purchasing Office and USTAR. Our concern is that this policy grants certain authority to the chair of the GA and the executive director without the policy having been approved by the GA. For example, the chair of the GA has the authority to approve expenditures over \$25,000 for outreach and research teams. The executive director also has the authority to approve sponsorships which are small grants (up to \$25,000) to sponsor events and not-for-profit organizations. We found instances where the executive director approved sponsorships of events and not-for-profit organizations.

USTAR administrators stated that they did not think that the GA had to approve internal accounting policies and procedures because they comprised an internal document. Because the GA is the entity charged with the responsibility to oversee USTAR, we believe that this document should be reviewed and approved by the GA. Clearly, the executive director can and should have certain authority, but only as granted by the GA. We therefore recommend that the GA review and approve USTAR's Internal Accounting Policies and Procedures.

### **Governing Authority Should Adopt A Conflicts of Interest Policy**

We believe that the GA should establish and adopt a conflicts of interest policy for its members. Currently, the GA has no policy, rule, or statement addressing conflicts of interest. It should be noted that we did not find any concerns with practices of GA members, but feel that a conflicts of interest policy could prevent future problems.

The State Treasurer, who sits on the GA, informed us that a conflict of interest policy is a common practice for other boards that he is involved in. The Governor's Handbook for Boards and Commissions states:

The approach taken by the Board member with a conflict of interest is an individual decision. While no specific law exists mandating how conflicts of interest should be resolved, the Board could establish a policy recommending how conflicts of interest should be handled. While that policy may not be binding on a Board member, it would reflect the Board's attitude as to the best way to handle

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**USTAR's GA has no policy, rule, or statement addressing conflicts of interest.**

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action items where there is a potential conflict of interest. Some Boards have established policies on handling conflicts of interest.

We therefore recommend that the GA be proactive in this area and establish and adopt a conflicts of interest policy for board members.

## **Management Should Work to Ensure Compliance With Appointment Requirements of Chair**

We found that the appointment of the USTAR GA chair has not occurred in compliance with statute. *Utah Code 63M-2-301(4)(a)* reads that, “the governor shall select the chair of the governing authority to serve a one-year term.” The chair of the GA has served in this position since the inception of USTAR. While the chair has been a devoted member of the GA since the beginning, we were unable to find any record of his reappointment over the last six years.

An official from the Governor’s Office informed us that with over 400 boards and commissions, they rely on agencies to help inform them when appointments are necessary. While the Governor’s Office does rely on respective agencies to help ensure compliance, they should still be aware of statutorily required appointments. The USTAR executive director informed us that he has tried to touch base with the Governor’s Office every two years to ensure that the USTAR GA transitions per legislative intent. Officials from the Governor’s Office were unable to recall any reappointment of the GA chair occurring and no record of a reappointment exists. Other appointments to the GA appear to be in line with legislative intent. Moving forward, we recommend that management track the appointment of GA members, including the chair, and work with the Governor’s Office to help ensure compliance with statute.

## **USTAR Needs to Ensure Compliance With Open Meeting Laws**

USTAR management needs to work with the GA to ensure compliance with the State’s Open and Public Meetings Act. USTAR’s open meeting minutes have not been written or maintained as

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**We found that the appointment of USTAR’s Governing Authority chair has not occurred in compliance with statute.**

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**USTAR’s open meeting minutes have not been written or maintained in accordance with the law and statutorily required open meetings recordings are few.**

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required by the law and statutorily required recordings of open meetings are few. We also found that closed meeting practices of the GA have not been in compliance with statutory provisions for closed meeting records and discussions. Finally, while USTAR has an assigned representative from the attorney general's office, they have not utilized this resource to help them ensure compliance.

### **Governing Authority Meeting Minutes Have Not Been Maintained in Accordance with the Law**

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**We found that meeting minutes were at times lacking key information such as motions made and that statutorily required recordings of public meetings were limited to just a few meetings.**

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Our review of USTAR operations was difficult because GA meeting minutes have not been maintained in accordance with the law. Specifically, we found that meeting minutes were at times lacking key information such as motions made and that statutorily required recordings of public meetings were limited to just a few meetings.

*Utah Code 52-4-203(2)(c)* requires that written minutes of open meetings contain “the substance of all matters proposed, discussed, or decided by the public body which may include a summary of comments made by members of the public body.” We found many examples of minutes lacking substance and adequate detail relating to presentations and discussion items brought before the GA.

We also believe motions made by GA members may not be included in meeting minutes. We attended a GA board meeting and noted a motion was made on a particular item. Upon review of the approved written minutes a month later, we found the motion was not included or mentioned in the minutes. We fear other motions brought before the GA have not been properly recorded. This conclusion was reached by reviewing some USTAR actions such as the U of U's decision to reallocate their budgets retroactively, but found no GA discussion in the minutes on this matter.

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**It was very difficult for us to document decisions made by the Governing Authority, especially early decisions regarding the funding of research teams.**

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As previously mentioned, it was very difficult for us to document decisions made by the GA, especially early decisions regarding the funding of research teams. From our review of GA meeting minutes, we were only able to identify one specific instance where the GA approved initial budgets for three research teams, as discussed in Chapter III. Many other research teams have received USTAR funding, but we were unable to document the GA's approval of initial budgets.



## **Governing Authority's Closed Meetings Have Not Complied with the Law**

*Utah Code* requires public bodies to record the proceedings of closed meetings (in limited circumstances only an affidavit is required). Statute also requires that the public body announce and enter into written record the purpose of a closed meeting. We found that the GA has conducted closed meetings, but neither minutes nor recordings of the meetings are available. Observation of one closed meeting revealed that the GA did not comply with the statutory requirements for holding a closed meeting.

We recommend that USTAR management works to ensure compliance with the record requirements and the closed meeting requirements of the state's Open and Public Meetings Act. In observing USTAR's operations, we found that management has not utilized their assigned attorney general, which could have helped them navigate these legal waters. USTAR management acknowledged that they will start using their assigned attorney general in the future and we recommend that they do so.

### **Recommendations**

1. We recommend that USTAR management ensure that operating policies and procedures are developed and ensure that all policies and procedures are approved by the Governing Authority.
2. We recommend that the Governing Authority adopt a conflicts of interest policy.
3. We recommend that USTAR management track the appointment of Governing Authority member terms, including the chair, and work with the Governor's Office to help ensure compliance with statute.
4. We recommend that the Governing Authority ensure that management keeps minutes in compliance with the State's Open and Public Meetings Act.

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**We found that the Governing Authority conducted closed meetings, but neither minutes nor recordings of the meetings were available as required by law.**

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5. We recommend that the Governing Authority ensure that closed meetings are held in compliance with the State's Open and Public Meetings Act.

## **Appendices**

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**Appendix A:  
 USTAR's January 2013 Return on  
 Investment Report to the Legislature**



January 2013

# Utah's ROI on USTAR is 313%

**FUNDS INVESTED**  
 2007 - 2013 (TO DATE)

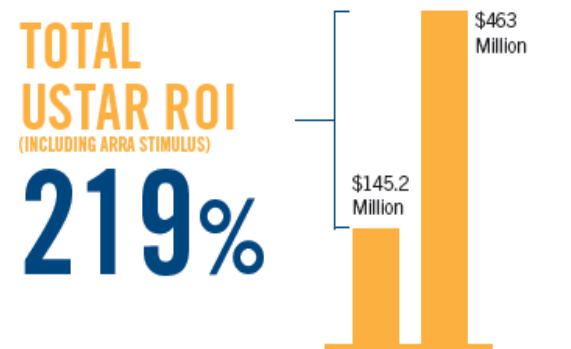
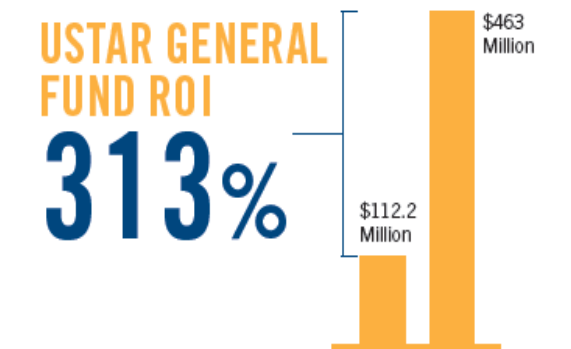
Utah General Fund	\$112,232,600
Federal ARRA Stimulus	\$33,000,000

**UTAH'S ECONOMIC IMPACT**

Jobs Created	3,380
Earnings	\$125,799,634
UT Tax Revenue	\$10,994,888

**RETURN ON INVESTMENT**

Sponsored Research	\$142,314,316
Private Investment	\$130,000,000
Engineering Contracts	\$134,000,000
SBIR	\$5,814,977
TOIP/BiG	\$50,847,000
<b>TOTAL</b>	<b>\$462,976,293</b>



**“USTAR has rapidly emerged as not just the state’s primary innovation driver, but as a national best practice.”**  
*– Brookings Institution*

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## Appendix B.1: USTAR's Overall Revenue and Expenses

<b>USTAR Budget</b>									
	FY 2007 Actual	FY 2008 Actual	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actuals	FY 2013 Actuals	FY 2014 Forecast	
<b>Sources of Funding:</b>									
General Fund-Ongoing	19,250,000	19,324,500	16,397,800	15,296,100	14,501,300	13,952,700	16,990,300	22,014,000	
General Fund-One-Time	-	-	(1,947,700)	(5,072,900)	-	540,500	3,000,000	-	
Federal Funds	-	-	-	15,884,351	17,115,649	-	-	-	
SBIR Fees	-	-	6,315	9,600	4,750	3,107	7,329	5,200	
Other Funds (1)	-	-	-	-	-	-	128,146	-	
Prior Year Carryforward (Beginning Nonlapsing)	-	9,286,195	11,269,700	12,164,981	16,744,865	21,701,985	10,923,721	602,648	
<b>Total Funds Available</b>	<b>19,250,000</b>	<b>28,610,695</b>	<b>25,726,115</b>	<b>38,282,132</b>	<b>48,366,564</b>	<b>36,198,292</b>	<b>31,049,496</b>	<b>22,621,848</b>	
<b>Uses of Funding: (see Appendix B.2 to B.5 for more detail)</b>									
<i>Admin/Outreach Line Item (2)</i>									
Outreach and Administration	672,157	3,056,114	3,507,632	2,633,637	2,530,734	2,509,762	2,604,882	3,958,620	
Technology Commercialization Grants	-	-	-	674,104	2,463,808	401,569	27,711	-	
University of Utah Research Team	128,047	8,819,192	11,992,964	12,159,312	12,730,038	14,192,639	14,301,121	-	
Utah State University Research Team	2,136,552	4,651,186	5,619,733	6,352,571	8,939,999	8,170,600	13,513,135	-	
U of U and USU Advance Payments	7,027,049	814,503	(7,559,196)	(282,357)	-	-	-	-	
<i>Research Line Item (2)</i>									
University of Utah Research Team	-	-	-	-	-	-	-	11,111,300	
Utah State University Research Team	-	-	-	-	-	-	-	7,407,600	
<b>Total Expenses</b>	<b>9,963,805</b>	<b>17,340,995</b>	<b>13,561,134</b>	<b>21,537,267</b>	<b>26,664,579</b>	<b>25,274,571</b>	<b>30,446,848</b>	<b>22,477,520</b>	
<b>Carryforward Remaining "Closing Nonlapsing"</b>	<b>9,286,195</b>	<b>11,269,700</b>	<b>12,164,981</b>	<b>16,744,865</b>	<b>21,701,985</b>	<b>10,923,721</b>	<b>602,648</b>	<b>144,328</b>	

Note 1: Includes funding provided from reimbursements

Note 2: Legislative action in 2013 General Session split USTAR's line item from one to two, separating Outreach and Administration expenses from Research Team expenses

**Appendix B.2**  
**USTAR's Administration and Outreach Expenses**

<b>USTAR Administration and Outreach Program Expenditures</b>								
<b>Program Expenditures</b>	<b>Actual FY 2007</b>	<b>Actual FY 2008</b>	<b>Actual FY 2009</b>	<b>Actual FY 2010</b>	<b>Actual FY 2011</b>	<b>Actual FY 2012</b>	<b>Actual FY 2013</b>	<b>Forecast FY 2014</b>
Administration	225,843	239,655	475,452	426,908	434,237	429,195	430,291	420,000
Marketing & Communication	-	-	365,676	305,643	344,010	329,702	179,275	264,000
Virtual Integration Network	-	122,123	95,252	167,097	47,180	70	16,057	22,000
Strategic Initiatives	446,314	1,142,573	298,399	166,839	61,674	-	98,686	500,000
BioInnovations Gateway (BIG)	-	-	367,462	222,326	330,691	258,237	109,860	160,000
BIG WIRED Reimbursement	-	-	(117,462)	(209,829)	(218,437)	-	-	-
SBIR/STTR	-	-	138,141	168,148	147,181	140,386	169,187	220,000
TOIP Southern Utah	-	300,591	402,805	282,669	309,182	305,530	362,057	398,000
TOIP Eastern Utah	-	298,597	347,691	378,524	364,345	380,508	262,019	634,620
TOIP Central Utah	-	233,078	359,956	411,303	383,285	336,358	527,665	670,000
TOIP Northern Utah	-	475,692	487,719	314,010	327,386	329,777	449,785	670,000
TOIP SLCC Utah	-	243,804	286,542	-	-	-	-	-
<b>Total Uses</b>	<b>672,157</b>	<b>3,056,114</b>	<b>3,507,632</b>	<b>2,633,637</b>	<b>2,530,734</b>	<b>2,509,762</b>	<b>2,604,882</b>	<b>3,958,620</b>



## Appendix B.3 USTAR's Grant Program Awards

<b>USTAR Technology Commercialization Grant (TCG) Program (Called Go-To-Market (GTM) Grant Program beginning in FY 2014,</b>									
<b>Grant Awards</b>	<b>Actual FY 2007</b>	<b>Actual FY 2008</b>	<b>Actual FY 2009</b>	<b>Actual FY 2010</b>	<b>Actual FY 2011</b>	<b>Actual FY 2012</b>	<b>Actual FY 2013</b>	<b>Forecast FY 2014 (1)</b>	
Outreach Awards	-	-	-	267,380	1,065,098	242,895	-	-	
University of Utah Awards	-	-	-	247,847	978,204	127,357	27,711		
Utah State University Awards	-	-	-	158,876	420,506	31,317	-		
<b>Total Grant Awards</b>	-	-	-	<b>674,104</b>	<b>2,463,808</b>	<b>401,569</b>	<b>27,711</b>	-	

Note 1: Outreach is budgeted to receive \$340,000 in grants in fiscal year 2014. However, the awards are budgeted in the outreach regions' individual line items.

## Appendix B.4 USTAR's University of Utah Expenses

<b>University of Utah USTAR Research Teams Expenditures</b>											
Programs and Institutes Expenditures	Actual FY 07	Actual FY 08	Actual FY 09	Actual FY 10	Actual FY 11	Actual FY 12	Actual FY 13	Forecast FY 14			
<b>Energy Technology</b>	<b>43,478</b>	<b>630,230</b>	<b>725,280</b>	<b>336,856</b>	<b>568,202</b>	<b>1,566,102</b>	<b>1,319,526</b>	<b>1,727,300</b>			
Fossil Energy	43,478	630,230	725,280	329,265	537,628	998,850	899,048	818,798			
Alternate Energy Center	-	-	-	7,591	30,575	567,252	420,478	908,502			
<b>Digital Media</b>	<b>-</b>	<b>-</b>	<b>14,023</b>	<b>213,014</b>	<b>278,863</b>	<b>205,930</b>	<b>348,155</b>	<b>549,922</b>			
Digital Media	-	-	14,023	213,014	278,863	205,930	348,155	549,922			
<b>Medical Imaging Technology and Brain Medicine</b>	<b>80,828</b>	<b>463,168</b>	<b>2,964,605</b>	<b>2,674,926</b>	<b>5,066,295</b>	<b>5,868,784</b>	<b>3,585,808</b>	<b>3,060,506</b>			
Diagnostic Imaging	19,632	24,427	557,466	780,153	884,375	1,048,839	1,360,102	804,037			
Circuits of the Brain	16,687	103,060	1,053,485	930,995	810,387	648,752	516,025	308,733			
Imaging Technology	44,509	335,681	1,336,452	620,294	754,425	1,018,135	757,307	1,054,941			
Nanoscale & Biomedical Photonic Imaging	-	-	17,202	343,484	1,983,155	910,490	775,081	892,795			
3T	-	-	-	-	633,953	2,242,568	177,293	-			
<b>BiDevice and BioPharma</b>	<b>-</b>	<b>755,636</b>	<b>615,842</b>	<b>766,383</b>	<b>1,283,761</b>	<b>1,025,494</b>	<b>937,261</b>	<b>2,008,455</b>			
Biomedical Device Innovation	-	753,457	609,407	753,414	774,404	1,025,494	937,261	667,242			
Health Science Clusters I & II (New Program in FY 14) (1)	-	2,179	6,435	12,969	9,357	-	-	1,341,213			
Bio Lab	-	-	-	-	500,000	-	-	-			
<b>NanoTechnology</b>	<b>3,741</b>	<b>1,379,352</b>	<b>2,104,832</b>	<b>4,716,023</b>	<b>3,407,705</b>	<b>2,054,185</b>	<b>1,374,279</b>	<b>1,815,117</b>			
Wireless Nanosystems	3,741	355,246	527,115	1,641,395	954,949	947,807	677,610	1,128,684			
Nanotechnology Biosensors	-	1,024,106	1,497,804	1,343,732	491,627	442,201	368,108	229,044			
Micro & Nano Systems Integration	-	-	79,913	1,730,896	1,961,128	664,177	328,562	457,389			
<b>Other Costs</b>											
Utah Collaborative Arrhythmia Project (Joint Venture)	-	-	-	-	97,533	102,467	1,200,000	-			
Startup space	-	4,390,806	1,852,382	1,685,008	1,815,433	667,423	159,925	-			
USTAR O&M Contribution	-	-	-	-	-	1,743,711	1,833,830	1,700,000			
Student Initiative - Bench to Bedside	-	-	-	-	32,247	88,044	(672)	-			
MRSEC Match	-	-	-	-	-	540,500	3,293,010	-			
Nanofab Retrofit	-	-	-	-	-	-	250,000	250,000			
Equipment/Other expense	-	1,200,000	3,716,000	1,767,103	180,000	330,000	-	-			
<b>Total Programs and Institutes Expenditures</b>	<b>128,047</b>	<b>8,819,192</b>	<b>11,992,964</b>	<b>12,159,312</b>	<b>12,730,038</b>	<b>14,192,639</b>	<b>14,301,121</b>	<b>11,111,300</b>			

Note 1: Previously Personalized Medicine and Cell Therapy & Regenerative Medicine

## Appendix B.5 USTAR's Utah State University Expenses

<b>Utah State University USTAR Research Teams Expenditures</b>									
Programs and Institutes Expenditures	Actual FY 07	Actual FY 08	Actual FY 09	Actual FY 10	Actual FY 11	Actual FY 12	Actual FY 13	Forecast FY 14	
<b>Energy Innovations</b>	<b>348,687</b>	<b>1,278,942</b>	<b>1,004,129</b>	<b>2,438,690</b>	<b>1,841,145</b>	<b>1,759,578</b>	<b>4,139,327</b>	<b>2,518,438</b>	
Utah Advance Transportation Instst.	-	-	-	-	-	79,694	1,710,000	910,000	
Biofuels	348,687	1,278,942	1,004,129	1,588,037	658,982	398,143	-	-	
Intuitive Buildings (I2B)	-	-	-	456,899	855,846	832,010	900,000	1,020,307	
I2B Prototyping	-	-	-	-	78,815	71,185	-	-	
EDL Center one time grant	-	-	-	393,754	105,327	-	-	-	
Energy Initiative	-	-	-	-	142,175	336,388	1,529,327	588,131	
Plasma	-	-	-	-	-	42,157	-	-	
<b>Earth and Space Innovations</b>	<b>949,551</b>	<b>1,847,834</b>	<b>1,949,899</b>	<b>1,716,189</b>	<b>3,164,324</b>	<b>1,021,485</b>	<b>1,445,375</b>	<b>1,081,546</b>	
Active Sensing	949,551	1,847,834	1,868,696	1,241,818	1,389,282	71,303	200,000	200,000	
Space Weather	-	-	81,203	474,371	800,427	624,797	345,375	181,546	
STORM	-	-	-	-	974,615	325,385	900,000	700,000	
Semiconductor (CLOSED FY09)	-	-	-	-	-	-	-	-	
<b>BioInnovations</b>	<b>555,122</b>	<b>1,305,826</b>	<b>2,127,538</b>	<b>1,680,719</b>	<b>3,047,012</b>	<b>3,541,369</b>	<b>7,290,288</b>	<b>3,422,616</b>	
Applied Nutrition Research (formerly CAN)	555,122	1,305,826	1,640,640	1,086,800	939,997	496,164	230,000	-	
Synthetic Bio-Manufacturing Center (SBC)	-	-	486,898	592,311	1,963,410	2,034,144	4,051,047	2,065,252	
Veterinary Diagnostics and Infectious Disease	-	-	-	1,608	84,473	937,194	2,209,241	1,357,364	
Utah Collaborative Arrhythmia Project (Joint Venture)	-	-	-	-	59,132	73,868	800,000	-	
<b>Commercialization Innovations</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>216,235</b>	<b>1,169,752</b>	<b>-</b>	<b>-</b>	
TCG's (FY10 and FY11 ARRA Funding)	-	-	-	-	-	-	-	-	
Commercialization Program Startup	-	-	-	-	216,235	969,752	-	-	
Productization	-	-	-	-	-	200,000	-	-	
Potash	-	-	-	-	-	-	-	-	
UCAID	-	-	-	-	-	-	-	-	
<b>Other Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	
Instructional Tech/Media	-	-	-	192,223	112,916	-	-	-	
USTAR O&M Contribution	-	195,322	204,682	200,275	558,367	678,416	309,750	-	
Semiconductor (Closed Program)	283,192	23,262	333,485	124,475	-	-	-	-	
Salary Obligations on Old MOUs	-	-	-	-	-	-	285,000	285,000	
Other	283,192	23,262	333,485	316,698	112,916	-	-	-	
<b>New Programs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	
EPSCoR	-	-	-	-	-	-	100,000	100,000	
<b>Subtotal Programs and Institutes Expenditures</b>	<b>2,136,552</b>	<b>4,651,186</b>	<b>5,619,733</b>	<b>6,352,571</b>	<b>8,939,999</b>	<b>8,170,600</b>	<b>13,569,740</b>	<b>7,407,600</b>	
Pending USTAR reimbursement payment to USU	-	-	-	-	-	-	(56,605)	-	
<b>Total Programs and Institutes Expenditures</b>	<b>2,136,552</b>	<b>4,651,186</b>	<b>5,619,733</b>	<b>6,352,571</b>	<b>8,939,999</b>	<b>8,170,600</b>	<b>13,513,135</b>	<b>7,407,600</b>	

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## **Agency Response**

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October 4<sup>th</sup> 2013

John M. Schaff, CIA  
Auditor General  
Office of the Legislative Auditor  
W315 Utah State Capitol Complex  
Salt Lake City, UT 84114

Auditor General Schaff:

Please find attached the Utah Science Technology and Research Initiative response to “A Performance Audit of the Utah Science Technology and Research Initiative”.

We appreciate the dedication and professional work of your staff in the discovery of these findings. It took many hours to reach the depth of detail needed to make such findings by the audit team of Rick Coleman, Brian Dean, Andrea Parrish, Candace Ware and Derek Olson.

This report will be discussed at length at our next Governing Authority meeting to define and produce procedures needed to accurately capture our organizations outcomes with increased accountability and transparency. We have recently hired a new Financial Manager, Jim Grover, who has experience with GOMB working with Economic Development and Higher Education budgets as well as Process Improvement. We are confident that he will bring an increased level of rigor to our performance management programs. We thank you for your efforts in guiding us to become a better organization and we look forward to our one-year follow-up with your team.

Dinesh Patel  
Chair  
USTAR Governing Authority

Spencer P. Eccles  
Vice-Chair  
USTAR Governing Authority

### Recommendation 1

We recommend that USTAR report actual outcomes where possible and identify when estimates are being used when reporting performance metrics.

*Response: We agree with and accept the recommendation. When reporting project metrics, USTAR should use actual outcomes and when estimates are used, we will use references and footnotes to explain assumptions. USTAR will create procedures to validate references for any publically released document. USTAR will provide the data source and make such references available upon request.*

### Recommendation 2

We recommend that USTAR develop a methodology to accurately track, validate (post performance reviews), and report key metrics such as jobs created, companies formed, and commercialization revenue generated to ensure that reported information is accurate.

*Response: We agree with and accept the recommendation. USTAR implemented the use of Salesforce CRM as a project tracking and performance metric depository in 2009. This system of tracking and reviewing measures is vital to accountability of the performance of our programs. While this standardized system and methodology does exist and is deployed in our TOIP business units, our agency is undergoing a full review of the system. Much of the difficulty in reproducing Appendix A during the audit process can be attributed to the unusual situation of employing three different USTAR finance managers in less than a two-year time period. The finance manager position performs budget and expenditure control and provides internal audit of the Salesforce system. We are committed to reviewing metrics to avoid duplication that leads to inaccurate over reporting. We will utilize contract and/or administrative rule to further define expectations for reporting key metrics with the research universities and technical outreach programs, resulting in a strengthened process. We will produce better information by an appropriate amount of post-performance review. Upon completing post performance review we will share information with the Governing Authority for their review of team performance. We will achieve increased transparency by posting results for review by the Legislative Fiscal Analyst, Governor's Office of Management and Budget and the general public.*

### Recommendation 3

We recommend that USTAR develop measures for defining high-quality jobs.

*Response: We agree with and accept the recommendation. USTAR has a role to play in facilitating and tracking high-quality jobs, but may find limits on appropriateness of inquiring about salaries and wages paid by a company who have received new intellectual property and/or services from USTAR. While new jobs created are captured and tracked in Salesforce, salary information on these jobs are not currently captured. An approach needs to be discovered as to how to obtain this information while not turning away businesses that feel that requiring salary information is too intrusive. The Governor's Office of Economic Development has offered assistance to USTAR to help define high-quality jobs and can help us to discover if and in which scenarios a company would be willing to share salary and wage data after receiving services from USTAR.*



#### Recommendation 4

We recommend that USTAR report to the Legislature an accurate return on investment, which is the change to the state's tax revenue

*Response: We agree with and accept the recommendation. Developing an accurate return on investment is vital to our accountability. USTAR is committed to reaching a consensus with stakeholders on a definition of return on investment as directed by the Governing Authority.*

#### Recommendation 5

We recommend that USTAR clarify and formalize required reports from research teams, including:

A. Ensuring that reports required by Governing Authority Administrative Rule, contract, or policy are received. B. Specifying what metrics research teams must report and how they are defined. C. Where possible, establishing benchmarks or expected performance levels for metrics that research teams are expected to achieve.

*Response: We agree with and accept the recommendation. USTAR has been and currently receives annual research reports, by team, including key metrics and expenses by year and expense type. We track key metrics including disclosures submitted, provisional patents filed, patents filed and patents issued, active licenses, and companies started and brought to Utah. Research teams are currently under contract to provide measures as requested from the Governing Authority. USTAR agrees these reports can be made stronger. Management will work with the Governing Authority to discuss what, when, and how these reports and policies will be improved. This will be implemented in conjunction with Recommendation 2.*

#### Recommendation 6

We recommend that USTAR clarify and formalize required reports from universities, including:

A. Ensuring that annual reports of commercialization revenue required by Governing Authority Administrative Rule are received. B. Clarifying in Administrative Rule how USTAR project should be defined to ensure that commercialization revenue is appropriately distributed.

*Response: We agree with and accept the recommendation. USTAR currently has in place a commercialization revenue sharing and distribution policy in an administrative rule. USTAR management will discuss with the Governing Authority to determine if clarifications are needed in the administrative rules or if changes to statute are needed for the research institutions for the distribution of revenue sharing.*

#### Recommendation 7

We recommend that USTAR review the approval and use of research team funding by universities to ensure that:

A. Research team program budget required by Administrative Rule are received and approved by the Governing Authority before funds are released. B. Future commitments to fund USTAR faculty salaries are understood and documented. C. Expenditures comply with legislative intent to fund USTAR research teams and only cover non-team expenditures that are specifically approved by the Governing Authority.

*Response: We agree with and accept the recommendation. USTAR has an annual process in place wherein the Governing Authority receives budget requests from administration, technology*

*outreach and university research. USTAR's appropriations from the legislature cannot be released without approval from the Governing Authority. With recommendation number five, USTAR management will work with the Governing Authority to define what information shall be reported. Management will provide analysis of research expenses including salaries and non-team expenditure to improve transparency and decision making ability of the Governing Authority. We will build policies and procedures around what type and when Research University information shall be presented to the Governing Authority and how and when they will authorize expenditures.*

#### Recommendation 8

We recommend that USTAR establish lease agreements with the University of Utah and Utah State University for the occupancy and use of its facilities, including responsibility for payment of O&M costs.

*Response: We agree with and accept the recommendation. USTAR has sent a memorandum of understanding on occupancy, use of facilities and O&M costs to University of Utah and Utah State University which is being reviewed by the Universities as of the date of this response. USTAR is anticipating an agreement to the MOU shortly from the universities.*

#### Recommendation 9

We recommend that USTAR ensure that expectations are clear and metrics are established in up-to-date contracts and established rules or policies and procedures to evaluate outreach program performance.

*Response: We agree with and accept the recommendation. Please refer to the response to recommendation 2.*

#### Recommendation 10

We recommend that the Governing Authority ensure current outreach programs and initiatives are consistent with legislative intent.

*Response: We agree with and accept the recommendation. USTAR desires to be in full compliance of the law. USTAR will discuss each program with the Governing Authority to re-analyze the programs relationship to defined statute and will determine, with support of the Legislature, if programs shall continue.*

#### Recommendation 11

We recommend that USTAR management ensure that operating policies and procedures are developed and ensure that all policies and procedures are approved by the Governing Authority.

*Response: We agree with and accept the recommendation. USTAR has developed policies and procedures for the allocation of funds to the research universities in administrative rule and accounting policies and procedures in standard administrative documents. Each of these policies and procedures will be thoroughly reviewed with the Governing Authority for their approval.*

Recommendation 12

We recommend that the Governing Authority adopt a conflicts of interest policy.

*Response: We agree with and accept the recommendation. USTAR will work with partner agencies who have boards or commissions to adopt the appropriate conflict of interest policy for Governing Authority members. We will ensure this policy is approved by the AG's office.*

Recommendation 13

We recommend that USTAR management track the appointment of the Governing Authority member terms, including the chair, and work with the Governor's Office to help ensure compliance with statute.

*Response: We agree with and accept the recommendation. Tracking appointment of and recommending change to the Governor's Office of the Governing Authority has always been a priority of USTAR. We will ensure additional management attention on appointments will occur going forward.*

Recommendation 14 & 15

We recommend that the Governing Authority ensure that management keeps minutes in compliance with the State's Open and Public Meetings Act. We recommend that the Governing Authority ensure that closed meetings are held in compliance with the State's Open and Public Meetings Act.

*Response: We agree that compliance with the State's Open and Public Meetings Act is vital to transparent governing of the USTAR program. USTAR administrators will keep meeting minutes and periodically review the State's Open and Public Meetings Act with the Governing Authority during regularly scheduled meetings. Management will make recommendations to the Governing Authority during the meeting if compliance is not followed.*