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## An Audit Report on Management Controls at Texas Tech University System

Lawrence F. Alwin, CPA

February 14, 2000

Members of the Legislative Audit Committee:

Texas Tech University (University) should improve contract administration and strategic planning for research, which have a direct impact on the University's growth as a higher education institution with increased focus on research. The University's current operating budget exceeds \$380 million. In addition, Texas Tech University Health Sciences Center should consider using complete cost information in decisions on managed care contracts (fiscal year 1999 revenues of \$12 million) for patient services issued through its non-profit corporation.

### Positive Audit Results at Texas Tech System Entities

#### Texas Tech University

- Prior State Auditor's Office Investment Recommendations

#### Texas Tech University Health Sciences Center

- Strategic Planning
- Oversight of Regional Academic Health Centers

#### Texas Tech University System Administration

- Transition to a Formal System

Monitoring and training weaknesses in contract administration create risk that the University will pay for services or products it has not received or that do not meet expected quality or performance levels. The risk of those instances increases with continued funding growth. Non-research contracts in fiscal year 1999 totaled \$43 million.

While the University has substantially increased research funding, the lack of detailed action plans and monitoring could delay the University's progress toward becoming a "Top 100" research institution. As a "Top 100" research university, Texas Tech would benefit from additional opportunities for research

funding. In fiscal year 1999, Texas Tech University research expenditures exceeded \$34 million.

Management's responses indicate that they generally concur with the recommendations. Those responses, other opportunities to improve business processes, and operations in which we noted effective controls are included in the attachment to this letter.

We commend Texas Tech management for actively addressing current contracting and human resource issues. We also appreciate the cooperation of management and staff during this review. Please contact Carol A. Noble, CISA, CGFM, Audit Manager, at (512) 479-4700 if you have any questions.

Sincerely,

Lawrence F. Alwin, CPA  
State Auditor

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Attachment

SAO Report No. 00-012

## Overall Conclusion

Texas Tech University (University) should improve contract administration and strategic planning for research, which have a direct impact on the University's plan to grow as a higher education institution with increased focus on research. The University's current operating budget exceeds \$380 million. In addition, Texas Tech University Health Sciences Center (Health Sciences Center) should consider using complete cost information in decisions on managed care contracts (fiscal year 1999 revenues of \$12 million) issued through its non-profit corporation.

Section 1:

## Enhance Contract Administration

University contract administration is not sufficient to ensure that funds are spent appropriately. Most of the contract monitoring processes are decentralized, which is inherently riskier than a centralized contract administration practice; however, the University has already begun to address those risks.

In fiscal year 1999, the University had more than 550 non-research contracts<sup>1</sup> totaling \$43 million. The non-construction contracts discussed in this audit totaled \$17.3 million. Considering that volume, the University may have significant dollars that are not effectively monitored.

As the University strives toward its goal of becoming a "Top 100" research facility, contracted dollars and the need for efficient and effective contract administration controls will increase. To address that need, we identified opportunities for improvement in contract monitoring, training, policies and procedures, and contract tracking.

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- Contract monitoring at the department and central administration levels needs to be evaluated for effectiveness. The University currently relies on designated contract administrators within University departments to monitor contractors and notify central administration of vendor non-performance issues. There is no formal risk assessment performed by the central administration to identify contracts that may require closer scrutiny.
- In the decentralized structure of the University's contracting system, department

<sup>1</sup> Audit scope did not include construction contracts or operations since audits of the Office of Facilities Planning and Construction were recently completed by Texas Tech Internal Audit and Deloitte and Touche. The 126 construction contracts totaled \$25.7 million.

contract administrators have primary responsibility for contract performance monitoring. However, departmental staff members are only provided limited training on contract administration.

- Several University operating policies and procedures on contract administration are outdated and not comprehensive.
- The Department of Contract Administration tracks all contracts manually. The lack of comprehensive contracting information impedes management's ability to plan adequately for contract administrative and training needs.

Recommendation:

University management should improve contract administration processes to ensure that the University receives quality goods and services. Corrective steps include, but are not limited to, the following:

- Evaluate contract monitoring processes across the University.
- Develop and implement effective monitoring practices for different contract types.
- Ensure shared monitoring results across departments to preclude continuing contracts with poor performers.
- Enhance contract training for department contract administrators.
- Update and develop additional policies and procedures for contracting.
- Automate current Department of Contract Administration contract inventory information.

University management has already taken steps to address these issues. An automated contract tracking system, training manual, new monitoring processes, and revised policies and procedures are currently under development. We encourage management to complete these efforts to improve contract administration processes.

Section 2:

## Plan and Measure Progress Toward “Top 100” Goal

### National Science Foundation Criteria for Becoming a “Top 100” Research Facility

The “Top 100” designation was established by the National Science Foundation in 1954. Universities which meet the following criteria receive annual surveys and responses to those surveys are used to determine “Top 100” rankings.

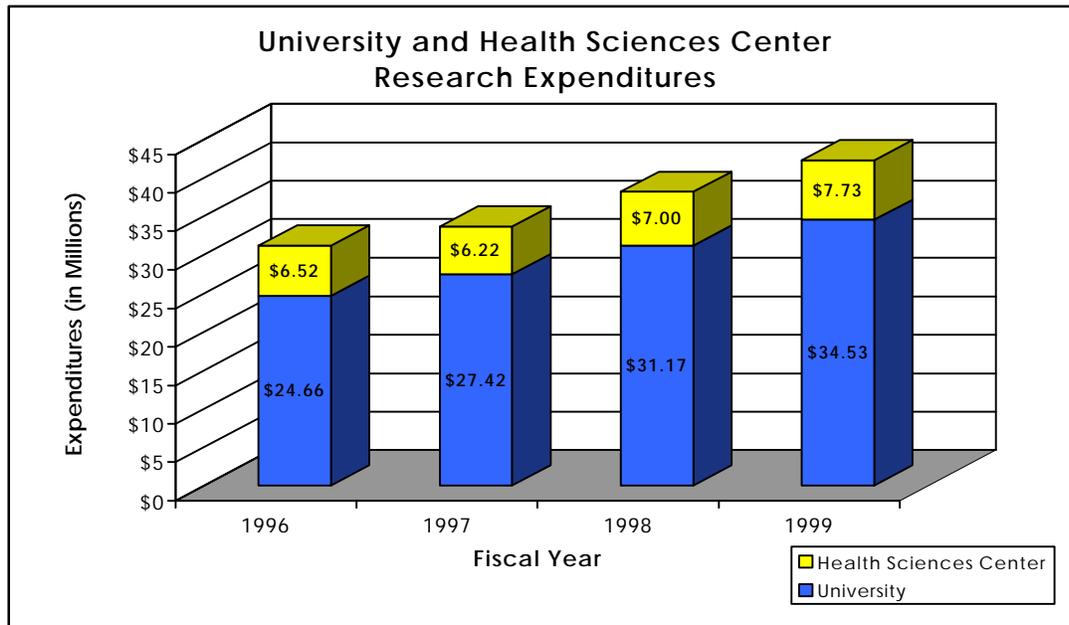
- Doctoral programs in the science and engineering fields, or
- Annually perform at least \$50,000 in separately budgeted Research and Development

The University needs to strengthen strategic planning via benchmarks and monitoring to support its goal of becoming a “Top 100” research facility by 2005. As a “Top 100” institution, the University will benefit from increased opportunities for research funding.

The University’s “Top 100” goal includes both the University and the Health Sciences Center. The University ranked 129th of 493 institutions on the latest National Science Foundation scale.

University divisional and strategic plans appear to carry the initiatives for “Top 100” status. In addition, the University increased research expenditures by more than \$11 million (36 percent) in four years, as shown below in Figure 1.

Figure 1



Source: University Annual Financial Reports

Despite these increases, we noted a lack of specific “Top 100” benchmarks and time lines at the system, divisional, and departmental levels. In addition, delays in implementing policy change (such as faculty workload policy and program reviews) could impact the “Top 100” goal.

Recommendation:

To strengthen the University's current strategic planning process toward becoming a "Top 100" research institution, we recommend that the University consider the following:

- Develop time lines and benchmarks for significant measures (such as graduate student enrollment, faculty workload) and a plan for monitoring progress toward the goal.
- Review current strategic planning process at all levels and implement action plans where needed.

Section 3:

## Purchase or Develop a Cost Accounting System for Non-Profit Corporation Contracts

### Texas Tech Physician Associates, a Non-Profit Corporation

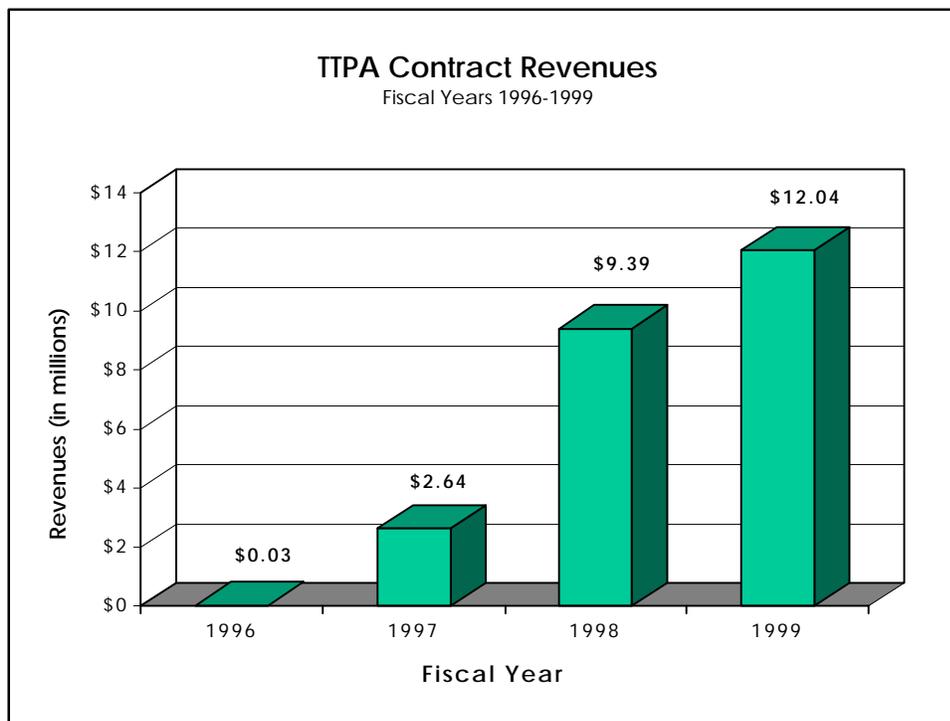
Texas Tech Physician Associates, a non-profit corporation, was created to enter into risk-based, managed care contracts on behalf of the Health Sciences Center. (As a state entity, the Health Sciences Center is legally prohibited from entering into risk-based contracts.)

Health Sciences Center management has not installed an accounting system to track costs (expenses) on individual Texas Tech Physician Associates (TTPA) contracts. As a result, complete cost information to use in decisions on TTPA managed

care contracts does not currently exist. Actual financial results on each contract are not determinable and Health Sciences Center management decisions in the competitive managed care market may be inaccurate.

As shown in Figure 2, TTPA contracts and contract revenues have grown from \$38,000 in 1996 to more than \$12 million in fiscal year 1999.

Figure 2



Source: Health Sciences Center financial reports. 1996-1998 revenues are for fiscal years ended March 31.

For fiscal year 1999, Texas Tech Physician Associates reports net earnings of \$776,000. However, most of the expenses applied to computation of those earnings are estimated.

Recommendation:

Health Sciences Center management should consider purchasing or developing a cost accounting system as the volume of contracts and revenues through its non-profit corporation (Texas Tech Physician Associates) continues to grow.

Section 4:

## Continue Initiative to Improve Human Resources

### Human Resource Self-Assessment Guide

To assist state entities in recognizing the effectiveness of their Human Resource Departments, the State Auditor's Office developed a Human Resources Self - Assessment Guide. The guide is interactive and includes a series of human resource questions that can be answered directly on the State Auditor's website at [www.sao.state.tx.us](http://www.sao.state.tx.us). After completion of the assessment, scores for each of the areas indicate where strengths exist as well as where potential improvements may be necessary.

The University completed the State Auditor's Office human resource self-assessment in September 1999. The self-assessment scores identified the need for possible improvement in the areas of recruitment and selection, training, and management practices. University management re-evaluated questions and answers in the training and human resource management areas and began using the self-assessment results on recruitment and selection practices.

In December 1999, the University developed a proposed action plan for improving recruitment and selection processes. We encourage management to implement that plan and actively pursue continued

improvements in human resource management. Current literature and research support the link between effective human resource management and organizational performance and productivity.

Section 5:

## Strengths in Other Operational Areas

### Previous Investment Recommendations Implemented

University management has adequately addressed and implemented recommendations from *A Review of Controls Over Investment Practices at Five State Investing Entities* (SAO Report No. 97-036, February 1997). The following improvements to investment operations were implemented:

- The Board created an Investment Advisory Committee to provide advice on asset allocation policy and investment results. In addition, an Investment Counselor was hired to assist with asset allocation studies, investment

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manager searches and evaluations, and investment policy and procedure reviews.

- University management has implemented a plan to coordinate the transition of existing endowments to the new investment strategy and to protect their long-term purchasing power.
- The Board developed and employed an asset allocation policy that defines specific asset allocation targets and allowable ranges for managers of the Consolidated Endowment Fund.
- Recommendations to provide additional information to decision makers and improve the completeness of certain policies and procedures were also either implemented or in the process of implementation.

### **Effective Strategic Planning and Regional Oversight Processes at the Health Sciences Center**

The Health Sciences Center appears to have established effective strategic planning and regional oversight processes.

The Health Sciences Center Strategic Plan aligns with its mission and reflects its goals and objectives. The Health Sciences Center also scans the medical and financial environments for changes that require adjustment in strategy.

Strategic planning processes involve executive management (President, Deans, and Vice Presidents) as well as key managers and faculty members. In addition, each Health Sciences Center school has responsibility for linking budget plans to the overall Health Sciences Center Strategic Plan.

In addition to operations in Lubbock, the Health Sciences Center management oversees Regional Academic Health Center operations in Amarillo, Odessa, and El Paso. Despite the geographic distances, oversight is achieved through the organizational structure and established management processes.

Academic and clinical responsibilities flow through the regional deans to the Dean of the School of Medicine to the President of the Health Sciences Center. Responsibilities for business affairs flow through regional financial officers to the Vice President for Fiscal Affairs to the President. Oversight processes also include monthly reports and frequent meetings with regional representatives.

## System Transition Adequately Planned

From our limited observations, it appears that Texas Tech University System (System) executives adequately planned for the transition to formal system status. The System was officially recognized through passage of Senate Bill 1088, 76th Legislature, Regular Session. On July 22, 1999, the Higher Education Coordinating Board approved the creation of the System, as required by the statute.

The System's structure, including the Office of the Chancellor, was reorganized effective September 1, 1999. The Board of Regents promptly approved the reorganization. Although we did not perform audit testing in this area, we were onsite during the transition to a formal system and discussed the transition with System officials.

## Objective, Scope, and Methodology

The objective of the audit was to review significant control systems to ensure that resources were used appropriately to achieve goals and strategies. Audit scope included selected operations at the University, Texas Tech University Health Sciences Center, and Texas Tech University System Administration.

The methodology used on the audit included interviews with executives and managers at all three entities, reviews of operating policies and procedures, analyses of reports (financial and performance), and reviews of contracts and other pertinent documents. Fieldwork was performed from August through November 1999, and was conducted in accordance with *Government Auditing Standards*.

## Distribution

- Members of the Board of Regents, Texas Tech University System
- Mr. John T. Montford, Chancellor, Texas Tech University System
- Ms. Frances Grogan, Director, Internal Audit, Texas Tech University System
- Mr. Donald R. Haragan, Ph.D., President, Texas Tech University
- David R. Smith, M.D., President, Texas Tech University Health Sciences Center

## Management's Response



TEXAS TECH UNIVERSITY

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER

JOHN T. MONTFORD  
Chancellor

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January 18, 2000

Mr. Lawrence Alwin, CPA  
State Auditor  
P. O. Box 12067  
Austin, Texas 78711

Dear Mr. Alwin:

This letter represents management's response to the draft report entitled, *An Audit Report on Management Controls at Texas Tech University System*. The Texas Tech University System and the institutions that comprise the Texas Tech System, Texas Tech University and Texas Tech University Health Sciences Center, wish to thank the State Auditor's Office for the observations and recommendations developed through this review.

The Texas Tech University System and its components are committed to continual improvement in the services we provide to our students, faculty and staff and in the educational mission we pursue on behalf of the citizens of the State of Texas. We appreciate the State Auditor's Office's recognition of Texas Tech's efforts in that regard and our willingness to take the steps appropriate and necessary to address management control issues. As a result of this audit, we will work to address all suggestions that will help us to fulfill our mission and that have not already been implemented.

Please refer to the attachment for more detailed responses to the specific issues addressed in the draft audit report.

Again, we appreciate the insights provided to us by the State Auditor's Office. If you have further questions regarding the audit report or this response, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read "John T. Montford".

John T. Montford

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**Management responses to specific issues addressed in the draft audit report  
entitled, *An Audit Report on Management Controls at Texas Tech University System***

There were four issues addressed by the management control audit work for which the State Auditor's Office (SAO) determined positive audit results. These issues included:

- ◆ Texas Tech University (TTU): Previous SAO investment recommendations have been implemented.
- ◆ Texas Tech University Health Sciences Center (TTUHSC):
  - Appropriate strategic planning has been conducted and implemented.
  - Effective regional oversight processes have been established.
- ◆ Texas Tech University System (the System): Transition to a formal system status has been adequately provided by the System administration.

More detailed responses to the other four issues addressed by the draft audit report are as follows.

**Section 1: Enhance Contract Administration**

The report noted a number of recommendations designed to improve contract administration processes at TTU and further recognized that TTU management has already taken the steps necessary to address those issues.

*Management response:*

*The steps recommended by the SAO already have been implemented. We will continue the training and improvement efforts that the University has identified.*

**Section 2: Plan and Measure Progress Toward Top 100 Goal**

The SAO draft audit report indicated that considerable progress already has been achieved toward Texas Tech's goal of becoming a Top 100 research institution, and University divisional and strategic plans appear to carry the initiatives for Top 100 status. The report recommended that benchmarks and monitoring should be strengthened as safety measures to avoid potential delays in attainment of the goal.

*Management response:*

*We appreciate that the SAO review recognized that significant progress has been made in Texas Tech's initiative to become a Top 100 research institution. We agree with the SAO recommendation that a broader array of contingency plans could support this effort, but we also believe that the audit report recommendations relative to benchmarking and strategic planning must be viewed with an understanding of the rather unique research strategic planning format in use at Texas Tech.*

*As the draft audit report indicated, Texas Tech has a strategic plan for research. The major strategies emulating from our 1997 plan are summarized in Exhibits 1 and 2, appended hereto. Also appended is a copy of our major actions and initiatives to achieve Top 100 research status by 2005 (see Exhibit 3).*

The format of this plan is somewhat atypical by casebook standards, and we've found that can result in some uncertainty on the part of those who do not customarily work with such models. The plan was written with heavy emphasis on recommendations aimed at enhancing research performance and productivity on campus. As a result, it did not include components typically included in strategic plans, such as mission statements, objectives, strategies, outcomes, and so forth.

After long and careful study of the planning models available, it is our opinion that the complexity and uniqueness of research at Texas Tech, from the central administration perspective, precludes the effective use of the traditional strategic planning format. Under the format in use at Texas Tech, the central administration facilitates the research mission, while most research planning occurs at levels where the research is actually conducted (i.e., at the level of the colleges, departments, centers and institutes).

Our ability to garner new or expanded research opportunities has been directly attributed to this approach. For example, a significant factor in our expansion of research activities with agencies such as NASA can be attributed to our ability to move quickly on research proposals without the traditional amount of bureaucratic intervention at the planning levels from central administration.

Texas Tech's strategies have resulted in dramatic improvement in research performance in the last four years. According to the research expenditure reports of the Texas Higher Education Coordinating Board, TTU experienced a larger percentage increase in research and development (R&D) expenditures from FY97 to FY98 than any other major research university in Texas. Our increase was seventeen percent (17%), more than twice the increase experienced by any other major research university in the state.

By measures such as this, Texas Tech has made significant progress in reaching its goal of Top 100 status. Further, according to The National Science Foundation Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1998, Texas Tech went from a rank of 134 in 1996 to 125 in 1998 in total research expenditures. During the same period, TTU went from 167 to 151 in federally financed research expenditures.

It is important to note that, with the exception of the benchmarks currently utilized by Texas Tech, few if any effective benchmarks exist. Benchmarks currently used by TTU to evaluate our research performance include, but are not limited to, the following:

- ◆ number of proposals
- ◆ number of awards
- ◆ number of faculty members involved in research
- ◆ the amounts of awards
- ◆ amounts of facilities and administrative costs
- ◆ the distribution of awards according to sponsors (such as the federal government, private entities, state entities, non-profit entities, and others)
- ◆ the amount of annual research expenditures for the entire university as categorized by topical area and by college, department, center, institute, and faculty member

We would welcome any assistance the SAO could provide in directing us to other benchmarks appropriate to the strategic planning model in use at Texas Tech. We will continue to independently pursue appropriate benchmarks.

For instance, the University currently is participating in an experimental research benchmarking project sponsored by the Society of Research Administrators (SRA), the National Association of Collegiate Business Officers (NACUBO) and KPMG, a private accounting firm. To this end, we have responded to a lengthy questionnaire designed to establish effective and valid benchmarks for the research enterprise. To our knowledge, Texas Tech is the only university in Texas to have participated in the SRA/NACUBO/KPMG program, and further, it is our belief that we are one of the few, if not the only, institution of higher education in Texas that has a stand-alone strategic plan for research.

Texas Tech is currently in the process of updating its strategic plan for research, and where feasible, the updated strategic plan will include timelines, additional benchmarks, and action and contingency plans. To assist with this process, we will avail ourselves of the services provided by the American Association for the Advancement of Science (AAAS), the world's largest interdisciplinary federation of scientists and engineers and the publisher of *Science* magazine. AAAS has established a program to assist universities in enhancing their research competitiveness. Initiated in 1996 under a grant from the National Science Foundation, the AAAS Research Competitiveness Service draws on the resources of the national science and engineering community to assist institutions in planning, reviewing and evaluating programs and initiatives in research, development and innovation. Carefully selected expert consultants working as individuals or in teams are brought in to undertake such tasks as strategic planning and program evaluation. We will ask AAAS to review our revised plan along with the benchmarks and timelines.

Finally, the audit report cites delays in implementing policy changes that could impact achievement of the Top 100 goal. In particular, workload policy and program reviews are mentioned.

It must be noted that a revised university workload policy is in the final stages of approval, which will be completed upon review and input from the many constituencies in the university that will be impacted by the changes in policy.

Also, guidelines for reinstitution of program reviews were developed in the 1997 Strategic Plan document, and the cycle of program reviews has already begun. A program review of the Department of Plant and Soil Science was carried out during the 1997-98 academic year that served as a prototype model. Funds were allocated during the 1998-99 academic year to hire an additional associate dean and additional support personnel in order to fully implement program reviews beginning with the 1999-2000 academic year. Program reviews are carried out on a six-year cycle, with one-sixth of the program to be reviewed each year. During the first full cycle, seven departments are being reviewed: Animal Science and Food Technology; Range, Wildlife and Fisheries Management; English; Health, Physical Education and Recreation; Theatre and Dance; Museum Science; and Industrial Engineering. The first set of reviews is in the final stages and will be completed early in Spring 2000.

### **Section 3: Purchase or Develop a Cost Accounting System for Non-Profit Corporation Contracts**

The SAO audit work resulted in a recommendation that TTUHSC acquire or develop a cost accounting system within Texas Tech Physician Associates (TTPA), a non-profit corporation created to enter into risk-based, managed care contracts on behalf of TTUHSC.

#### *Management response:*

*The board of directors and officers of Texas Tech Physician Associates agree that cost accounting and accurate financial information are important in all facets of decision making. As the volume of capitated contracts continues to increase, we intend to pursue accounting models that provide improved cost information for the managed care contract negotiation process.*

*TTPA is an entity that enters into risk-based contracts on behalf of TTUHSC and negotiates contracts with providers to fulfill the obligations required by the contracts. Managed care contracts held by TTPA vary in risk and the amount of utilization management required.*

*In fiscal year 1999, about 25% of the approximately \$12 million in TTPA total revenue was derived from full-risk capitated contracts. On capitated products, TTPA conducts routine utilization management and analysis. This analysis includes comparison of the actual claim costs and utilization against the expected costs and utilization developed by outside actuaries for the population.*

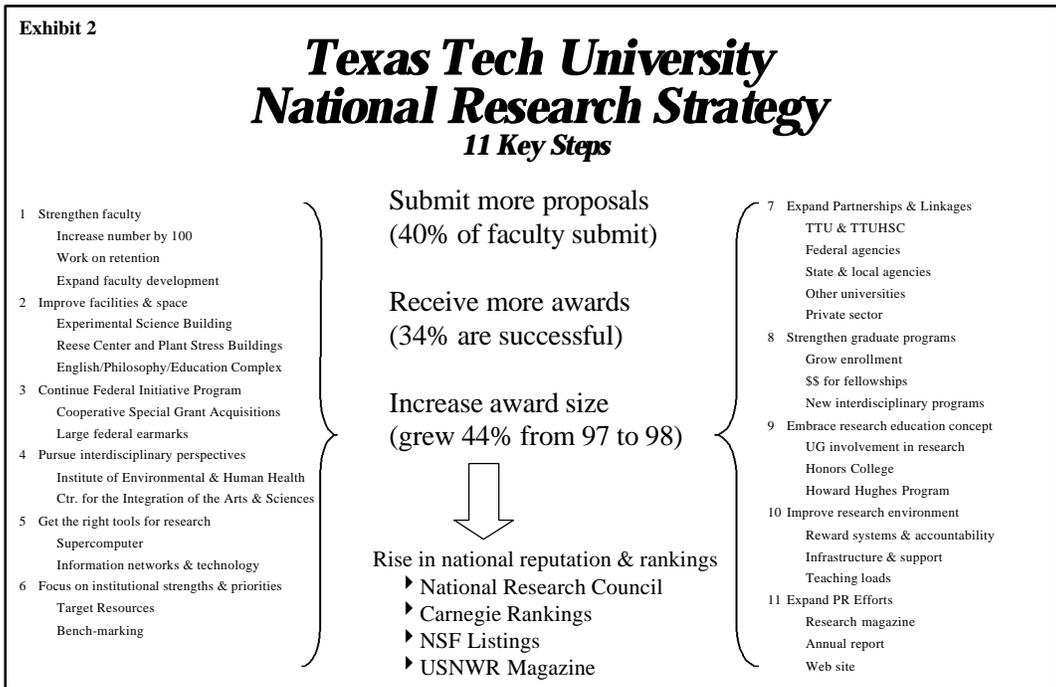
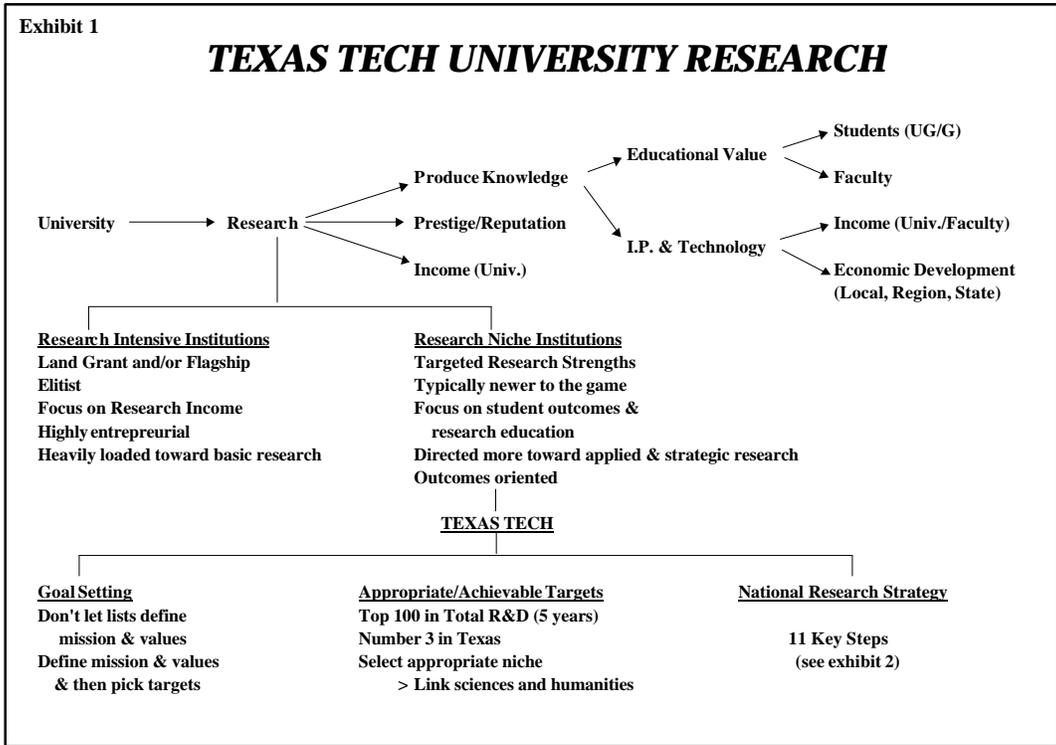
*The healthcare industry has not yet moved toward a cost accounting methodology but has historically used variations on the theme of cost/charge ratios. We would appreciate any recommendations from the SAO regarding operating cost accounting systems that meet the desired criteria.*

**Section 4: Continue Initiative to Improve Human Resources**

TTU had completed the SAO human resource self-assessment in September 1999, and the SAO recommended that TTU implement an action plan developed by TTU in December 1999 in response to areas for improvement identified by the self-assessment.

*Management response:*

*We concur with the SAO in the recommendations for possible self-improvement. As a result of this survey, TTU identified areas to improve in its recruitment and selection processes. These improvements will be implemented in the Spring of 2000, with completion of all identified tasks by April 1, 2000.*



**Exhibit 3**

**FOUR YEAR CHRONOLOGY OF MAJOR ACTIONS AND INITIATIVES  
AT TEXAS TECH TO ACHIEVE TOP 100 RESEARCH STATUS BY 2005**

Texas Tech University has taken the following actions and initiatives during the last four years (fiscal years 1997-2000) in an effort to reach a stated goal of becoming one of the Top 100 research universities in the United States:

**FY1997-2000:**

Instituted federal initiatives program to assist in obtaining special grant funds. Approximate cost: \$250,000/yr.

**FY1997-1999:**

Constructed a research wing to the Electrical Engineering building to support pulsed power research. Cost: \$1.5 million.

**FY1998-2000:**

Initiated a "Special Needs and Opportunities Fund" to assist researchers in satisfying critical or emergency needs. Cost: \$150,000/yr.

**FY1998 and FY2000:**

Initiated a "Seed Grant Program" to support preliminary research into new and emerging concepts and technologies. Cost: \$200,000/yr.

**FY1998 – present:**

Established The Institute for Environmental and Human Health, hired 10 new faculty and 13 new support personnel to staff it, remodeled about 75,000 sq. ft. to house it, and equipped it in state-of-the-art fashion. Approximate total cost to date: \$14.4 million.

**FY1998-1999:**

Acquired space at Reese Center to support research programs in Wind Science and Engineering, Advanced Vehicle Engineering, and Animal Science. Approximate total cost: \$470,000.

**FY1999 – present:**

Initiated a "New Faculty Start-Up Program" to assist departments and colleges in recruiting research faculty. Cost: FY1999 -- \$250,000; FY2000 -- \$500,000.

**FY1999:**

Established The Center for Biotechnology and Genomics, hired co-directors to administer it, and purchased new equipment for it. Approximate total cost to date: \$790,000.

**FY1999-2000:**

Established the "Office of Intellectual Property and Technology Transfer," hired a director and executive assistant, and provided funding for its operation. Approximate total cost: \$232,000/yr.

*[Exhibit 3 continued]*

**FY1999:**

Purchased SGI/Cray Origin 2000 higher performance computer to support the research mission of TTU. In addition, a director and assistant director for the newly established High Performance Computing Center have been hired. Approximate cost: \$2.35 million.

**FY1999-2000:**

Installation of fiber optic cable to connect the high performance computer at Reese Center with TTU and TTUHSC. Cost: \$1.7 million.

**FY1999-2000:**

Applied for and received accreditation from the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International), which will serve to expand and enhance our animal research programs. Cost: \$4,500/yr.

**FY2000:**

Initiated a strategy to hire 20 new research faculty in areas with demonstrated expertise and strength. Cost: \$1.5 million.

**New initiative:**

We recently entered into a \$250,000 matching program with Market Lubbock, Inc. for technology transfer. Total TTU fund commitment: \$500,000 over two years.

The following are established major research support initiatives that have been continued and enhanced during the last four years (fiscal years 1997-2000):

1. The "Research Incentive Award Program" has been enhanced during the last four years. Cumulative funding during that period: \$2.89 million.
2. The "Extramural Research Promotion" program has been enhanced during the last four years. Cumulative funding during that period: \$259,972.
3. Four additional staff in the Office of Research Services and Grant and Contracts Accounting have been hired during the last four years to provide expanded services to the research community at Texas Tech. Approximate cost: \$150,000/yr.