
**TECHNOLOGY AND RESEARCH INITIATIVE FUND
(TRIF)
ANNUAL REPORT**



ARIZONA BOARD OF REGENTS

**Arizona State University
Northern Arizona University
The University of Arizona**

**For the fiscal year ended June 30, 2006,
as required by A.R.S. §15-1648(D).**

September 1, 2006



Arizona Board of Regents
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Arizona State University

Northern Arizona University

University of Arizona

September 1, 2006

Governor Janet Napolitano
Senate President Ken Bennett
Speaker of the House of Representatives James Weiers
Arizona State Capitol
1700 West Washington Street
Phoenix, AZ 85007

Dear Governor Napolitano, President Bennett, and Speaker Weiers:

On behalf of the Arizona Board of Regents, Arizona State University, Northern Arizona University, and The University of Arizona, and in accordance with A.R.S. §15-1648(D), I am pleased to submit this Annual Report for the Arizona Board of Regents Technology and Research Initiative Fund (TRIF) for the fiscal year ended June 30, 2006. TRIF is continuously appropriated to the Arizona Board of Regents with Education 2000 (Proposition 301/November 2000) sales tax revenues pursuant to A.R.S. §42-5029(E)(2).

As required, ABOR has adopted rules to administer TRIF and has incorporated these rules into Board Policy 3-412 found in the appendix to this report.

This Annual Report provides budget and expenditure information on each TRIF initiative. These initiatives are consistent with statutory language calling for TRIF funds to support university research, development, and technology transfer related to the knowledge-based global economy; to expand access to baccalaureate or post-baccalaureate education for time- and place-bound students; to implement recommendations of the Governor's Task Force on Higher Education and the Arizona Partnership for the New Economy; and to develop programs that will prepare students to contribute in high technology industries located in Arizona.

Board Members: **President Robert B. Bulla**, Scottsdale **Fred T. Boice**, Tucson **Ernest Calderón**, Phoenix
Dennis DeConcini, Tucson **Jack B. Jewett**, Tucson **Anne L. Mariucci**, Phoenix
Christina A. Palacios, Phoenix **Gary L. Stuart**, Phoenix
Governor Janet Napolitano **Superintendent of Public Instruction Tom Horne**
Student Regents: **Edward Hermes**, ASU **Mary Venezia**, NAU
Executive Director: **Joel Sideman**

Governor Napolitano, President Bennett, Speaker Weiers
September 1, 2006
Page Two

Our FY 2006 TRIF budget supported initiatives in biosciences and biotechnology; information science and technology; access and workforce development, including Arizona Universities Network (AZUN) and preparation of math and science teachers; and optical sciences, water sustainability, and environmental research and development. These projects have been designed and implemented to better position Arizona as a major player in the global marketplace. Detailed business plans for each initiative have been developed and approved by the Arizona Board of Regents and are available on our website at: www.azregents.edu

Please contact me at 602-229-2505 or jsideman@asu.edu if I can answer any questions or provide additional information about these important and exciting initiatives.

Sincerely,

A handwritten signature in black ink that reads "Joel Sideman". The signature is written in a cursive, flowing style.

Joel Sideman
Executive Director

c: The Honorable Jan Brewer, Secretary of State
Ms. GladysAnn Wells, Director, Arizona State Library, Archives and Public Records
Members of the Arizona Board of Regents
Dr. Michael Crow, President, Arizona State University
Dr. John Haeger, President, Northern Arizona University
Dr. Robert Shelton, President, The University of Arizona

**ARIZONA BOARD OF REGENTS
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF) ANNUAL REPORT**

For the Fiscal Year Ended June 30, 2006

TABLE OF CONTENTS

Executive Summary	ii
Arizona University System Summary	
FY 2006 Actual / FY 2007-2011 Budgets Summary.....	1
FY 2006 Actual System Summary by Program Area	2
FY 2006 Actual / FY 2007 Budget Capital Expenditures.....	3
Arizona State University	
Summary.....	5
Biodesign Institute at Arizona State University.....	7
Campus Capital Infrastructure Development (ASU Polytechnic)	11
Classroom Laboratory/Computer Classroom II Building and Central Plant Expansion (ASU West)	12
Northern Arizona University	
Summary.....	13
Access/Workforce Development.....	17
e-Learning.....	21
Environmental Research, Development, and Education for the New Economy (ERDENE).....	25
Growing Biotechnology Initiative (GBI).....	29
University Initiatives	33
Arizona Universities Network (AZUN)	37
The University of Arizona	
Summary.....	41
Anyplace Access for Arizonans	43
Arizona Center for Information Systems and Technology (ACIST).....	47
BIO5 Institute	51
Critical Core Infrastructure.....	55
Optical Sciences and Technology	59
Technology Transfer Infrastructure	63
Venture Fund	67
Water Sustainability	69
Workforce Initiative: Educator Development Plan	73
Arizona Board of Regents Central Office	
Summary.....	77
Regents Innovation Fund Summary	79
Learner Centered Education (LCE).....	81
The University of Arizona College of Medicine–Phoenix Planning	87
Information Technology Collaborative (IT)	90
Arizona Water Institute (AWI).....	94
Arizona University System Redesign Study.....	97
Operating.....	99
Arizona Regents Reach Out (ARRO) Grants	101
Appendix	
Arizona Board of Regents Policy 3-412.....	107

**ARIZONA BOARD OF REGENTS
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
ANNUAL REPORT
For the fiscal year ended June 30, 2006**

EXECUTIVE SUMMARY

- ▶ Education 2000 (Proposition 301), passed by Arizona voters in November 2000, approved a 0.6 cent increase in the state sales tax to be dedicated to the universities, the community colleges, and K-12. Collection of the tax began on June 1, 2001.
- ▶ A.R.S. §15-1648 establishes the Technology and Research Initiative Fund (TRIF) to receive Proposition 301 revenue and gives the Arizona Board of Regents the authority to administer the fund. To date, \$265,300,932 in revenue from Proposition 301 has been received into TRIF.
- ▶ In March 2001 the Arizona Board of Regents approved a five-year TRIF budget plan for FY 2002-FY 2006, along with guidelines for implementation of the budget. The Board annually approves a revised budget and detailed performance measures for each initiative.
- ▶ A.R.S. §15-1648(D) requires the Board to submit to the Governor and the Legislature by September 1 of each year a report to include “a description of the amount and duration of each new award distributed and a description of the purpose and goals for each award. For existing awards, the Arizona Board of Regents shall use a detailed set of performance measures to determine the overall effectiveness of each award.”
- ▶ All FY 2006 TRIF-funded initiatives, with the exception of Regents Innovation Fund projects, which are responsive to emerging issues, were “existing awards,” i.e., they were continuing projects included in the five-year budget plan approved by the Regents in March 2001. Detailed business plans for each initiative have been developed by the universities and central office and are available on the Arizona Board of Regents web site at: www.azregents.edu
- ▶ The original FY 2006 TRIF revenue budget totaled \$55,322,900. Total actual TRIF revenue received during FY 2006 was \$67,519,943, resulting in over-realized revenue of \$12,197,043 (22%).
- ▶ An expenditure plan for this FY 2006 over-realized revenue is being developed by the Arizona Board of Regents and the universities at the time of this writing, and will be approved by the Board at its September 27-28, 2006, meeting. Expenditures will be reported in the FY 2007 TRIF Annual Report.

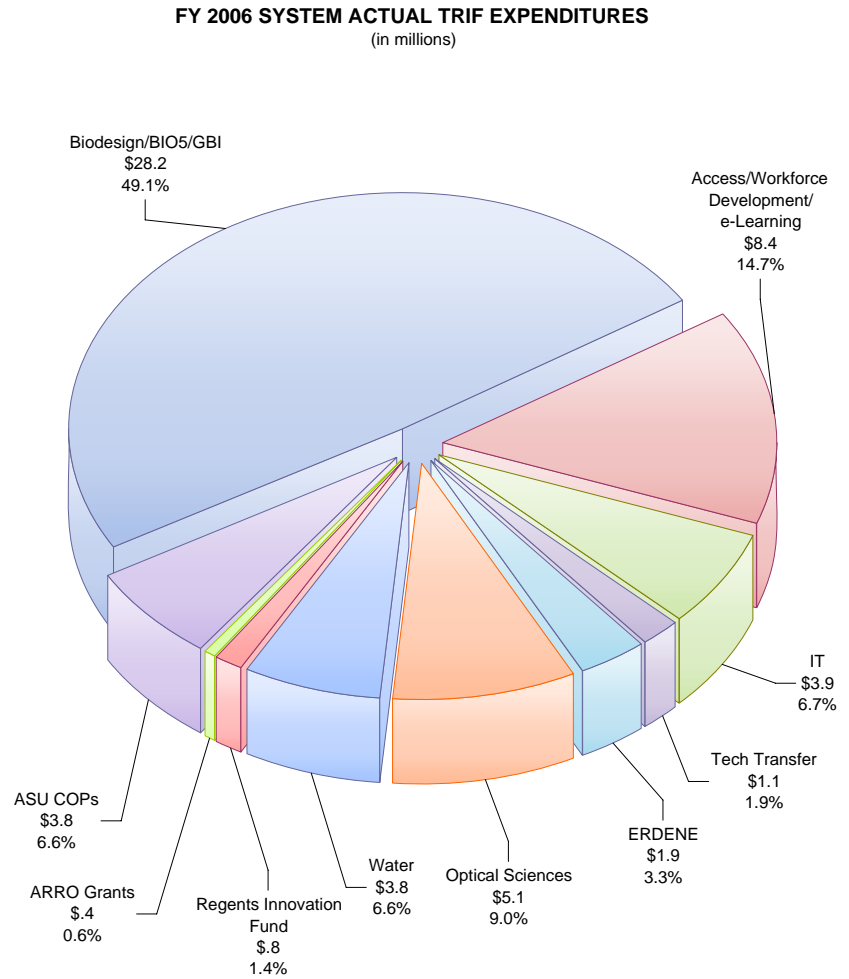
- ▶ Total TRIF expenditures in FY 2006 were \$58,456,161, representing 64% of total revenue available (including carryforward amounts from the prior year). Recognizing the timing under which these revenues flow to the Arizona Board of Regents from the Arizona State Treasurer's Office, that is, on a monthly basis and even after fiscal year end, along with the larger-than-expected revenue amount, this expenditure rate is not unexpected.
- ▶ Recognizing the volatility and unpredictability of the TRIF revenue stream, the universities and central office exercised sound budgetary and financial management in the expenditure of TRIF funds throughout FY 2006.
- ▶ TRIF budget guidelines adopted by the Board call for full expenditure of FY 2006 funds by December 31, 2006. The universities and central office may then request that any unexpended funds be reallocated for the same or a different use.
- ▶ Expenditure detail by university and central office and by initiative is presented in this report. For the first time, TRIF project brochures are included in this Annual Report, presenting in a concise format a description of each TRIF-funded project, project goals, performance analysis, financial information, management and advisory boards, and contact information to "Learn More" about each project.
- ▶ Detailed performance measures for evaluating individual initiatives were approved by the Board, as required by statute. Performance measures and outcomes have been compiled by each university and the central office for each TRIF initiative and, as mentioned above, are included in the project brochures.
- ▶ This report reflects the statutorily required funding for costs of Certificates of Participation (COPs) issued for the lease-purchase of buildings and associated infrastructure at ASU at the Polytechnic campus and ASU at the West campus.
- ▶ This report reflects compliance with the statutory 20% limitation on use of TRIF funds for capital projects expenditures. In FY 2006, 8.5% of TRIF expenditures were used for capital projects.
- ▶ This FY 2006 TRIF Annual Report is available on the Arizona Board of Regents website at: www.azregents.edu

ARIZONA UNIVERSITY SYSTEM
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 REVISED BUDGET</i>	<i>FY 2008 BUDGET</i>	<i>FY 2009 BUDGET</i>	<i>FY 2010 BUDGET</i>	<i>FY 2011 BUDGET</i>
REVENUE							
Carryforward	\$ 21,831,590	\$ 24,183,588	\$ 33,421,631	\$ 2,771,913	\$ 1,903,829	\$ 1,459,772	\$ 1,459,772
TRIF Revenue	55,672,162	67,519,943	58,293,884	61,317,778	63,946,817	67,635,073	71,059,509
TOTAL REVENUE	\$ 77,503,752	\$ 91,703,531	\$ 91,715,515	\$ 64,089,691	\$ 65,850,646	\$ 69,094,848	\$ 72,519,281
EXPENDITURES							
OPERATING BUDGET							
Personal Services	\$ 30,509,536	\$ 24,269,595	\$ 29,816,569	\$ 24,316,695	\$ 25,516,766	\$ 26,780,684	\$ 28,111,864
ERE	7,442,570	6,395,084	7,808,697	6,420,469	6,765,568	7,129,019	7,512,158
All Other Operating	20,753,542	17,031,630	15,009,599	12,196,620	13,012,900	13,876,735	14,790,719
Grants/Projects	2,189,227	988,562	14,232,784	1,500,000	1,500,000	1,500,000	1,500,000
TOTAL OPERATING BUDGET	60,894,875	48,684,871	66,867,649	44,433,784	46,795,234	49,286,438	51,914,741
CAPITAL BUDGET							
Building Renovation	3,118,365	592,200	4,720,100	3,171,300	3,394,100	3,260,500	3,507,400
Debt Service	5,140,000	4,047,000	7,506,520	7,562,144	7,929,656	8,686,082	9,096,232
ASU Polytechnic/West COPs	3,781,700	3,790,300	3,791,000	3,790,000	3,787,000	3,786,000	3,786,700
NAU Conference Center	-	-	2,000,000	-	-	-	-
TOTAL CAPITAL BUDGET	12,040,065	8,429,500	18,017,620	14,523,444	15,110,756	15,732,582	16,390,332
EXPENDITURES TOTAL	72,934,940	57,114,371	84,885,269	58,957,228	61,905,990	65,019,020	68,305,073
AZUN	4,562,942	1,341,790	4,058,332	3,128,634	2,384,884	2,516,053	2,654,436
EXPENDITURES GRAND TOTAL	\$ 77,497,882	\$ 58,456,161	\$ 88,943,601	\$ 62,085,862	\$ 64,290,874	\$ 67,535,073	\$ 70,959,509
SUMMARY BY PROGRAM AREA							
Biodesign/BIO5/GBI	\$ 35,685,051	\$ 28,179,253	\$ 33,092,448	\$ 26,170,880	\$ 27,285,080	\$ 28,460,480	\$ 29,700,580
Access/Workforce Development/e-Learning	8,658,226	8,417,643	10,554,198	8,795,423	8,915,621	9,042,430	9,176,214
Information Technology	4,301,188	3,869,831	-	-	-	-	-
Technology Transfer	1,260,048	1,086,949	1,003,176	800,000	800,000	800,000	800,000
ERDENE	2,076,480	1,890,041	2,539,478	1,872,092	1,872,092	1,872,092	1,872,092
Optical Sciences	5,269,662	5,140,423	3,434,063	3,200,000	3,200,000	3,200,000	3,200,000
Water Sustainability	4,494,514	3,813,224	3,944,871	3,200,000	3,200,000	3,200,000	3,200,000
Regents Innovation Fund	1,718,965	829,777	1,896,983	-	-	-	-
Arizona Regents Reach Out (ARRO) Grants	749,262	369,595	862,554	600,000	600,000	600,000	600,000
ASU Polytechnic/West COPs	3,781,700	3,790,300	3,791,000	3,790,000	3,787,000	3,786,000	3,786,700
Capital Projects (NAU, UA)	4,939,844	(272,665)	11,808,786	9,628,833	11,346,197	13,158,018	15,069,487
Over-realized Revenue Proposals TBD	-	-	11,957,712	-	-	-	-
EXPENDITURES TOTAL	72,934,940	57,114,371	84,885,269	58,057,228	61,005,990	64,119,020	67,405,073
AZUN	4,562,942	1,341,790	4,058,332	3,128,634	2,384,884	2,516,053	2,654,436
EXPENDITURES GRAND TOTAL	\$ 77,497,882	\$ 58,456,161	\$ 88,943,601	\$ 61,185,862	\$ 63,390,874	\$ 66,635,073	\$ 70,059,509

**ARIZONA UNIVERSITY SYSTEM
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY**

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>
REVENUE		
Carryforward	\$ 21,831,590	\$ 24,183,588
TRIF Revenue	55,672,162	67,519,943
TOTAL REVENUE	\$ 77,503,752	\$ 91,703,531
EXPENDITURES		
OPERATING BUDGET		
Personal Services	\$ 30,509,536	\$ 24,269,595
ERE	7,442,570	6,395,084
All Other Operating	20,753,542	17,031,630
Grants/Projects	2,189,227	988,562
TOTAL OPERATING BUDGET	60,894,875	48,684,871
CAPITAL BUDGET		
Building Renovation	3,118,365	592,200
Debt Service	5,140,000	4,047,000
ASU Polytechnic/West COPs	3,781,700	3,790,300
NAU Conference Center	-	-
TOTAL CAPITAL BUDGET	12,040,065	8,429,500
EXPENDITURES TOTAL	72,934,940	57,114,371
AZUN	4,562,942	1,341,790
EXPENDITURES GRAND TOTAL	\$ 77,497,882	\$ 58,456,161
SUMMARY BY PROGRAM AREA		
Biodesign/BIO5/GBI	\$ 35,685,051	\$ 28,179,253
Access/Workforce Development/e-Learning	8,658,226	8,417,643
Information Technology	4,301,188	3,869,831
Technology Transfer	1,260,048	1,086,949
ERDENE	2,076,480	1,890,041
Optical Sciences	5,269,662	5,140,423
Water Sustainability	4,494,514	3,813,224
Regents Innovation Fund	1,718,965	829,777
Arizona Regents Reach Out (ARRO) Grants	749,262	369,595
ASU Polytechnic/West COPs	3,781,700	3,790,300
Capital Projects (NAU, UA)	4,939,844	(272,665)
Over-realized Revenue Proposals TBD	-	-
EXPENDITURES TOTAL	72,934,940	57,114,371
AZUN	4,562,942	1,341,790
EXPENDITURES GRAND TOTAL	\$ 77,497,882	\$ 58,456,161



ARIZONA UNIVERSITY SYSTEM
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL/FY 2007 BUDGET CAPITAL EXPENDITURES
(\$ in thousands)

		Revised FY 2006 Budget	FY 2006 Actual	FY 2007 Budget
ASU	• R&D: <i>Biodesign Institute at ASU</i>	\$1	\$592	\$3,900
	• ASU Poly/West COPs*	n/a	n/a	n/a
	Total Capital	\$1	\$592	\$3,900
	Capital as % of Total ASU Budget	0.0%	3.0%	15.0%
NAU	• Access/Workforce Development/e-Learning	\$0	\$0	\$2,071
	• R&D:	\$3,117	\$0	\$3,700
	<i>Growing Biotechnology Initiative (GBI)</i>	\$0	\$0	\$0
	<i>e-Learning</i>	\$0	\$0	\$0
	<i>Environmental (ERDENE)</i>	\$0	\$0	\$0
	<i>Capital Projects</i>	\$3,117	\$0	\$0
	<i>University Initiatives</i>	\$0	\$0	\$3,700
	Total Capital	\$3,117	\$0	\$5,771
Capital as % of Total NAU Budget	16.8%	0.0%	27.8%	
UA	• Access/Workforce Development/e-Learning	\$360	\$262	\$0
	• Technology Transfer	\$160	\$119	\$0
	• R&D:	\$4,620	\$3,666	\$4,555
	<i>BIO5 Institute</i>	\$1,698	\$1,688	\$0
	<i>ACIST</i>	\$952	\$418	\$0
	<i>Optical Sciences</i>	\$1,118	\$1,000	\$0
	<i>Water Sustainability</i>	\$852	\$560	\$293
	<i>Critical Core Infrastructure</i>	\$0	\$0	\$4,262
	<i>Venture Fund</i>	\$0	\$0	\$0
	Total Capital	\$5,140	\$4,047	\$4,555
Capital as % of Total UA Budget	19.8%	17.1%	19.2%	
ABOR	• Arizona Reach Out (ARRO) Grants	\$0	\$0	\$0
	• Regents Innovation Fund	\$0	\$0	\$0
	Total Capital	\$0	\$0	\$0
	Capital as % of Total ABOR Budget	0.0%	0.0%	0.0%
SYSTEM	• Access/Workforce Development/e-Learning	\$360	\$262	\$2,071
	• Technology Transfer	\$160	\$119	\$0
	• R&D:	\$7,738	\$4,258	\$8,455
	<i>Biodesign/BIO5/GBI</i>	\$1,699	\$2,280	\$3,900
	<i>Information Technology</i>	\$952	\$418	\$0
	<i>ERDENE (Environmental)</i>	\$0	\$0	\$0
	<i>Optical Sciences</i>	\$1,118	\$1,000	\$0
	<i>Water Sustainability</i>	\$852	\$560	\$293
	<i>Capital Projects (NAU)/Critical Core Infrastructure (UA)</i>	\$3,117	\$0	\$4,262
<i>University Initiatives (NAU)/Venture Fund (UA)</i>	\$0	\$0	\$3,700	
Total System Capital	\$8,258	\$4,639	\$14,227	
20% Statutory Limit on Capital	\$14,743	\$10,933	\$17,031	
Capital as % of Total System Budget	11.2%	8.5%	16.7%	

*Not applicable. TRIF allocations for ASU Polytechnic and ASU West debt service are directed by statute. Therefore, these amounts are excluded from both the calculation of the total system capital and the 20% statutory limitation on capital expenditures.

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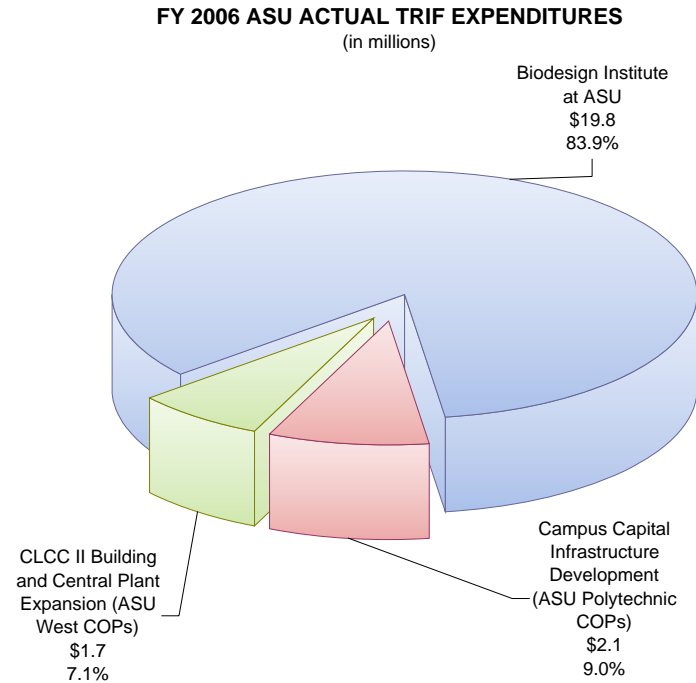
ARIZONA STATE UNIVERSITY
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 REVISED BUDGET</i>	<i>FY 2008 BUDGET</i>	<i>FY 2009 BUDGET</i>	<i>FY 2010 BUDGET</i>	<i>FY 2011 BUDGET</i>
REVENUE							
Carryforward	\$ 8,462,600	\$ 8,462,600	\$ 6,782,600 *	\$ -	\$ -	\$ -	\$ -
TRIF Revenue	21,874,400	21,874,400	23,000,600	24,047,000	25,158,200	26,332,600	27,573,400
TOTAL REVENUE	\$ 30,337,000	\$ 30,337,000	\$ 29,783,200	\$ 24,047,000	\$ 25,158,200	\$ 26,332,600	\$ 27,573,400
EXPENDITURES							
OPERATING BUDGET							
Personal Services	\$ 10,572,600	\$ 9,500,300	\$ 11,691,900	\$ 8,746,500	\$ 9,183,800	\$ 9,643,000	\$ 10,125,200
ERE	2,199,900	2,207,300	2,665,500	2,011,700	2,112,300	2,217,800	2,328,800
All Other Operating	13,781,600	7,464,300	7,734,600	5,447,400	5,800,900	6,176,500	6,575,400
TOTAL OPERATING BUDGET	26,554,100	19,171,900	22,092,000	16,205,600	17,097,000	18,037,300	19,029,400
CAPITAL BUDGET							
Building Renovation	1,200	592,200	3,020,100	3,171,300	3,394,100	3,260,500	3,507,400
Debt Service	-	-	880,100	880,100	880,100	1,248,800	1,249,900
COPs Lease Purchase Payment	3,781,700	3,790,300	3,791,000	3,790,000	3,787,000	3,786,000	3,786,700
TOTAL CAPITAL BUDGET	3,782,900	4,382,500	7,691,200	7,841,400	8,061,200	8,295,300	8,544,000
EXPENDITURES GRAND TOTAL	\$ 30,337,000	\$ 23,554,400	\$ 29,783,200	\$ 24,047,000	\$ 25,158,200	\$ 26,332,600	\$ 27,573,400
ARIZONA STATE UNIVERSITY TEMPE	\$ 26,555,300	\$ 19,764,100	\$ 25,992,200	\$ 20,257,000	\$ 21,371,200	\$ 22,546,600	\$ 23,786,700
ARIZONA STATE UNIVERSITY POLY	2,116,100	2,121,100	2,123,000	2,121,000	2,122,400	2,122,000	2,119,700
ARIZONA STATE UNIVERSITY WEST	1,665,600	1,669,200	1,668,000	1,669,000	1,664,600	1,664,000	1,667,000
EXPENDITURES GRAND TOTAL	\$ 30,337,000	\$ 23,554,400	\$ 29,783,200	\$ 24,047,000	\$ 25,158,200	\$ 26,332,600	\$ 27,573,400

* The FY 2007 Carryforward, adjusted for the impact of \$264,200 in FY 2006 year-end encumbrances, equals \$6,518,400.

ARIZONA STATE UNIVERSITY
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY

	<i>FY 2006</i> REVISED BUDGET	<i>FY 2006</i> ACTUAL
REVENUE		
Carryforward	\$ 8,462,600	\$ 8,462,600
TRIF Revenue	21,874,400	21,874,400
TOTAL REVENUE	<u>\$ 30,337,000</u>	<u>\$ 30,337,000</u>
EXPENDITURES		
OPERATING BUDGET		
Personal Services	\$ 10,572,600	\$ 9,500,300
ERE	2,199,900	2,207,300
All Other Operating	13,781,600	7,464,300
TOTAL OPERATING BUDGET	<u>26,554,100</u>	<u>19,171,900</u>
CAPITAL BUDGET		
Building Renovation	1,200	592,200
Debt Service	-	-
COPs Lease Purchase Payment	3,781,700	3,790,300
TOTAL CAPITAL BUDGET	<u>3,782,900</u>	<u>4,382,500</u>
EXPENDITURES GRAND TOTAL	<u>\$ 30,337,000</u>	<u>\$ 23,554,400</u>
ARIZONA STATE UNIVERSITY TEMPE	\$ 26,555,300	\$ 19,764,100
ARIZONA STATE UNIVERSITY POLY	2,116,100	2,121,100
ARIZONA STATE UNIVERSITY WEST	<u>1,665,600</u>	<u>1,669,200</u>
EXPENDITURES GRAND TOTAL	<u>\$ 30,337,000</u>	<u>\$ 23,554,400</u>



THE biodesign INSTITUTE

ARIZONA STATE UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)



The Institute's interdisciplinary research engages diverse capabilities including directed self assembly of macromolecules (top) and pulsed laser analysis of bio-energy transfer processes (middle).

The new facilities are designed to enhance communication and collaboration (bottom). The Biodesign Institute received R & D Magazine's 2006 Lab of the Year Award.

The Biodesign Institute at Arizona State University is ASU's flagship TRIF initiative focusing on **use-inspired, collaborative** research to improve human health and the quality of life. The research agenda emphasizes **translation** (the application of discoveries to commercial uses and societal benefits) and **impact** (the quest for effective innovation). Making these dreams a reality requires a bold new approach. To accelerate the pace of discovery, the Biodesign Institute merges formerly distinct fields of research, including biology, chemistry, physics, medicine, agriculture, environmental science, electronics, materials science, engineering and computing.

The Biodesign Institute is organized into a growing number of centers that link collaborators within ASU and affiliated institutions. Twelve centers were in operation at the beginning of FY06. Three new centers were recently established: 1) the **Center for BioEnergetics** focuses on energy metabolism and its relationship to human health, and seeking solutions to rare mitochondrial diseases afflicting children; 2) the **Center for Systems and Computational Biology** focuses on systems biology, an integrative approach leveraging advancements in genomics and proteomics, coupled with the latest computational technologies, to identify the molecular pathways relevant to disease; and 3) the **Center for EcoGenomics** focuses on developing tools and microscale devices for monitoring biological activity in various ecosystems to learn how organisms respond to changes in their environment.

ASU has also made complementary strategic investments in capacity building project areas such as information technology and materials to advance faculty groups and provide support functions for research that demonstrates promise for high impact economic development and projected future integration with the major Biodesign Institute initiatives.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	4
Management	4
Advisory Board	4
Learn More	4



Dr. George Poste
Director, The Biodesign Institute
& Del E. Webb Distinguished
Professor of Biology



PERFORMANCE ANALYSIS

PERFORMANCE MEASURES/DELIVERABLES		FY02	FY02	FY03	FY03	FY04	FY04	FY05	FY05	FY06	FY06	FY07	FY07	FY08	FY08	FY09	FY09	FY10	FY10	FY11	FY11
		Proj	Actual	Proj	Actual	Proj	Actual	Proj	Actual	Proj	Actual	Proj	Actual	Proj	Actual	Proj	Actual	Proj	Actual	Proj	Actual
Return on Investment (\$ amounts in millions)																					
Annualized total funding associated with federal awards		9.85	10.86	8.50	7.34	11.00	21.34	29.00	31.18	37.40	40.76	44.88	53.86	64.63	77.55	93.06					
Annualized total funding associated with non-federal contract awards		1.30	1.06	3.20	1.29	2.50	5.75	5.53	4.70	5.60	6.24	6.72	8.06	9.68	11.61	13.93					
Value of new startups to ASU		.06	.05	.12	.09	.24	1.40	2.20	2.53	3.00	3.8										
New products in marketplace		2	5	3	3	4	5	8	10	10	7										
Value of new products to ASU		.12	.42	.40	.40	.50	1.40	2.20	2.53	3.00	3.8										
Total licensing/other revenue associated with intellectual property												1.51	1.54	1.57	1.60	1.63					
Technology Transfer																					
New invention disclosures		15	97	27	91	109	98	120	166	144	152	145	147	148	150	151					
New patent applications filed		22	108	8	106	117	128	140	168	154	82	156	157	159	160	162					
New patents issued		3	11	2	17	20	18	20	41	20	22	20	20	21	21	21					
Total start-up companies licensing ASU technology		2	3	1	3	3	4	4	4	4	4	4	4	4	4	4					
Licenses or options signed (as indication of technology adoption by industry)		2	9	3	20	24	24	28	28	32	32	32	33	33	33	34					
New software packages distributed		1	-	2	6	8	10	15	2	N/A	N/A										
Form industry-university nationwide research consortium		-	-	x	In Progress	x	4	2	2	2	N/A										
Create research road map in collaboration with industry		x	In Progress	Completed	Completed	-	4	4	1	4	N/A										
Fund proof of concept grants to faculty		5	6	5	6	6	5	14	9	11	6										
Business plans written		2	2	3	6	3	9	10	8	11	2										
Technology transfer portal inquiries from industry		5	1	10	13	15	15	15	20	15	27										
Work Force Contributions																					
Post-doctoral appointments		20	5	5	48	10	44	32	64	37	88	37	38	38	39	39					
Post-doctoral researchers leaving to enter the workforce		-	-	-	19	8	24	24	32	26	39	26	27	27	27	27					
Graduate students employed		10	29	45	120	50	106	101	121	112	103	113	114	115	117	118					
Graduate students earning degrees and entering the workforce		-	-	-	33	20	67	67	63	74	71	75	75	76	77	78					
Undergraduate students involved		32	39	50	84	60	139	139	177	170	160	172	173	175	177	179					
Increase in number of teachers who graduate with math/science certification		50	9	10	-	15	7	25	(14)	8	7										
Growth in CSCSE Graduates		20	-21	40	10	60	37	40	53	50	30										
Partnerships/Collaborations																					
The number of Biodesign Institute research grants/contracts involving funding from non-government entities																					
The number of Biodesign Institute research grants/contracts involving subcontracts to non-ASU researchers																					
New research collaborations with industry and national laboratories		8	9	7	13	10	19	19	14	26	49										
Curriculum Innovations																					
Tier 1 Introduction to Information Technology for all students - Completed FY 2002		x	Completed																		
Tier 2 package of 3 courses		x	Partially				Partially		Partially												Partially
Tier 3 concentration for BIS degree				x	Partially		Partially		Partially												Partially
BS Applied Computing (ASU West) Begins Fall 2005			Approved	x						X	X										
High school students completing software design material		25	88	30	227	75	200	75	-	N/A	N/A										
Internships w/ industry		30	32	40	88	90	136	128	71	75	50										
New courses introduced (Bio, Info, Nano)		4	4	6	6	4	16	18	13	24	5										
Economic Development																					
Companies identifying ASU as a factor for relocating or expanding in AZ		1 large 2 small	2 large	1 large 3 small	0 large 2 small	1 large 2 small	1 large 3 small	1 large 3 small	7 large 3 small	4 large 4 small	3 large 4 small										

Note: The above amounts include the Biodesign Institute and capacity building project investments.

EXPLANATION OF PERFORMANCE ANALYSIS

- The **Return on Investment** measures and deliverables include federal and non-federal awards, along with the value and number of new products in the marketplace. Additional measures such as total licensing/other revenue associated with intellectual property also provide a benchmark for measuring this performance.
- **Partnerships/Collaborations** are an important component for growth of the Biodesign Institute. Increasing involvement with non-government and non-ASU researchers such as the Mayo Clinic and Barrows Neurological Institute provides additional opportunities to expand and enhance ASU research.
- **Technology Transfer** measures provide results for ASU's newly structured technology transfer initiative, Arizona Technology Enterprises (AzTE). Measures for inventions, patents and licensing activity are included. The Biodesign Institute provides a primary focus for AzTE as it facilitates the development of intellectual property, promotes industrial linkages, drives technology marketing, and accelerates the successful transition of ASU discoveries into the marketplace.
- **Curriculum Innovations and Economic Development** measures, along with selected measures in the other categories, were used for the first TRIF funding cycle (FY02 - FY06). For the second funding cycle (FY07 - FY11), several of these measures were no longer applicable or were replaced with more current and meaningful measures.
- **Workforce Contributions** measures show the impact of TRIF funding and research participation by undergraduate students, graduate students, and post-doctoral appointments. The measures also include the number of graduate students and post-doctoral researchers leaving ASU to enter the workforce.



FINANCIALS

	FY02	FY03	FY04	FY05	FY06	FY06	FY07	FY08	FY09	FY10	FY11
	Actual	Actual	Actual	Actual	Rev Budget	Actual	Rev Budget	Budget	Budget	Budget	Budget
REVENUE											
Carry Forward	\$ -	\$ 10,391,900	\$ 5,108,200	\$ 8,517,200	\$ 8,355,300	\$ 8,355,300	\$ 6,791,200				
New TRIF Revenue	15,217,000	14,850,600	16,112,500	18,692,900	18,200,000	18,200,000	\$ 19,201,000	\$ 20,257,000	\$ 21,371,200	\$ 22,546,600	\$ 23,786,700
TOTAL REVENUE	\$ 15,217,000	\$ 25,242,500	\$ 21,220,700	\$ 27,210,100	\$ 26,555,300	\$ 26,555,300	\$ 25,992,200	\$ 20,257,000	\$ 21,371,200	\$ 22,546,600	\$ 23,786,700
OPERATING BUDGET											
Personal Services	\$ 1,492,100	\$ 5,907,800	\$ 7,120,900	\$ 9,136,400	\$ 10,572,600	\$ 9,500,300	\$ 11,691,900	\$ 8,746,500	\$ 9,183,800	\$ 9,643,000	\$ 10,125,200
Employee Related Expenses	221,700	938,900	1,386,700	2,048,700	2,199,900	2,207,300	2,665,500	2,011,700	2,112,300	2,217,800	2,328,800
All Other Operating Expenses	2,150,700	10,760,500	3,853,700	6,994,000	13,781,600	7,464,300	7,734,600	5,447,400	5,800,900	6,176,500	6,575,400
Total Operating Budget	3,864,500	17,607,200	12,361,300	18,179,100	26,554,100	19,171,900	22,092,000	16,205,600	17,097,000	18,037,300	19,029,400
CAPITAL BUDGET											
Building Renovation	960,600	2,527,100	342,200	675,700	1,200	592,200	3,020,100	3,171,300	3,394,100	3,260,500	3,507,400
Debt Service							880,100	880,100	880,100	1,248,800	1,249,900
Total Capital Budget	960,600	2,527,100	342,200	675,700	1,200	592,200	3,900,200	4,051,400	4,274,200	4,509,300	4,757,300
TOTAL EXPENDITURES	\$ 4,825,100	\$ 20,134,300	\$ 12,703,500	\$ 18,854,800	\$ 26,555,300	\$ 19,764,100	\$ 25,992,200	\$ 20,257,000	\$ 21,371,200	\$ 22,546,600	\$ 23,786,700

Note: The above amounts include the Biodesign Institute and capacity building project investments.

GOALS & RESULTS

The ASU strategic decision to invest its TRIF allocation in the biosciences and supporting technology areas resulted in the formation of the Biodesign Institute and the strategic selection of complementary capacity-building projects for funding. Consistent with the TRIF goals, the Biodesign Institute will accelerate ASU's participation in the biomedical/biotechnology research enterprise. The Institute provides the catalyst for discovery and innovation in a physical and intellectual environment that promotes communication, collaboration, and integration of resources.

This initiative will provide an essential component for the ascendance of a globally competitive biosciences cluster in Arizona. Our expectation is to make Arizona a leader in the development and practice of predictive, preventative, and personalized medicine.

Goals:

- Increase the governmental and private funding of research connected with the Biodesign Institute by 25 percent annually
- Increase the rate of technology transfer and commercial development coming from the bioscience/biotechnology/biomedicine areas
- Identify opportunities where recent IT developments can enable the successful growth of novel transdisciplinary areas of research
- Enhance interdisciplinary collaborative research in nanotechnology and advanced materials

Indicative Results:

- FY06 TRIF related Federal and non-federal awards increased to \$47M, 31% over FY05.
- Biodesign Building A opened in December 2004; Building B opened in January 2006. The new facilities play an important role in recruitment efforts. In FY06, Biodesign recruited 3 senior faculty, 3 junior faculty, 2 research professors and 17 additional research faculty. Total staffing is now over 500.
- Dr. Joseph Wang, Director, Bioelectronics and Biosensors, was recognized by the American Chemical Society as the 2006 Electrochemist of the Year.
- MacroTechnology Works (MTW) was formed to leverage ASU's investment in the \$44M/5-year Army Flexible Display Center grant and facility. MTW provides a vehicle to take new discoveries rapidly to the prototype production phase and works closely with ASU's TRIF initiatives.
- Frederic Zenhausern, Director, Applied NanoBioscience, was awarded a \$5.9 million grant for developing means to monitor the effects of low dose radiation exposure.

MANAGEMENT

OFFICE OF THE VICE PRESIDENT FOR RESEARCH AND ECONOMIC AFFAIRS

Jonathan Fink: Vice President for Research and Economic Affairs

Stephen Goodnick: Associate Vice President for Research

THE BIODESIGN INSTITUTE

George Poste: Director, the Biodesign Institute and Del E. Webb Distinguished Professor of Biology

Michael Tracy: Deputy Director

ADVISORY BOARD

★ = National Academy Member

⊛ = Nobel Laureate

Chairman:

★ **Dr. Stephen Benkovic,** Professor; Eberly Chair in Chemistry — Penn State

Members:

- ★ **Dr. Allen J. Bard,** Director, Laboratory of Electrochemistry — UT at Austin
- ★ **Dr. Carolyn Bertozzi,** T. Z. & Irmgard Chu Distinguished Professor, Department of Chemistry — University of California, Berkeley
- ★ **Dr. Charles R. Cantor,** CSO — SEQUENOM, Inc.
- ★ **Dr. John Donoghue,** Professor of Neuroscience Division of Biology & Medicine — Brown University
- ★ **Dr. David Eisenberg,** Director, Institute for Genomics and Proteomics — UCLA-DOE
- ★ **Dr. Larry Gold,** Chairman and CSO — SomaLogic, Boulder, CO
- ⊛★ **Dr. Lee Hartwell,** President and Director — Fred Hutchinson Cancer Center, Seattle, WA
- ★ **Dr. Sidney Hecht,** John W. Mallet Professor of Chemistry; Professor of Biology — Univ. of Virginia
- ★ **Dr. Daniel Nocera,** W. M. Keck Professor of Energy & Professor of Chemistry — MIT
- ★ **Dr. Michael T. Osterholm,** Director, Center for Infectious Disease Research and Policy; Professor, School of Public Health — University of Minnesota
- ★ **Dr. Lucy Shapiro,** Director, Beckman Center for Molecular and Genetic Medicine; Ludwig Professor of Cancer Research — Stanford University School of Medicine
- ★ **Dr. James Wells,** President and CSO — Sunesis Pharmaceuticals

LEARN MORE

Office of the Vice President for Research and Economic Affairs
480.965.1225
<http://ovprea.asu.edu/>

The Biodesign Institute
480.727.0370
<http://www.biodesign.asu.edu>



ARIZONA STATE UNIVERSITY POLYTECHNIC
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007-11 BUDGET
Campus Capital Infrastructure Development

	FY 2006 REV BUDGET	FY 2006 ACTUAL	FY 2007 REV BUDGET	FY 2008 BUDGET	FY 2009 BUDGET	FY 2010 BUDGET	FY 2011 BUDGET
REVENUE							
Carryforward	\$ 31,000	\$ 31,000	\$ (5,000)	\$ -	\$ -	\$ -	\$ -
TRIF Revenue	2,085,100	2,085,100	2,128,000	2,121,000	2,122,400	2,122,000	2,119,700
TOTAL REVENUE	\$ 2,116,100	\$ 2,116,100	\$ 2,123,000	\$ 2,121,000	\$ 2,122,400	\$ 2,122,000	\$ 2,119,700
EXPENDITURES							
OPERATING BUDGET							
Personal Services							
ERE							
All Other Operating							
TOTAL OPERATING BUDGET	-	-	-	-	-	-	-
CAPITAL BUDGET							
Building Renovation							
Debt Service							
COPs Lease Purchase Payment	2,116,100	2,121,100	2,123,000	2,121,000	2,122,400	2,122,000	2,119,700
TOTAL CAPITAL BUDGET	2,116,100	2,121,100	2,123,000	2,121,000	2,122,400	2,122,000	2,119,700
EXPENDITURES GRAND TOTAL	\$ 2,116,100	\$ 2,121,100	\$ 2,123,000	\$ 2,121,000	\$ 2,122,400	\$ 2,122,000	\$ 2,119,700

Note: ASU East's name was changed to ASU Polytechnic (ASUP) effective July 1, 2005.

INITIATIVE OVERVIEW

The ASU Polytechnic Proposition 301 initiative funds \$27.5 million of Certificates of Participation (COPs) for infrastructure development, including multiple building renovations, campus infrastructure improvements and a new campus student union. The building renovations prepared academic space, including classrooms, faculty and staff offices, and student support services to meet anticipated growth. The infrastructure improvements continued the transition of the former Williams Air Force Base to an attractive university campus. The major projects included campus street and roadway improvements, new campus malls, lighting and emergency telephones, and campus landscape improvements.

The COPs were issued in June, 2002. Scheduled payments run through 2021. Approximately \$26.8 million (98%) of the COPs was committed to building renovation and campus infrastructure projects at ASUP. Completed projects include the Administration Building, the Simulator Building renovations, the renovation of Wanner and Sutton Halls, as well as the North and South Pedestrian Malls. Both the new Union Building and the Agribusiness Center renovation projects were completed in August 2004 and were fully operational for the fall semester. ASUP completed all TRIF funded capital improvement projects by June 2005.

ARIZONA STATE UNIVERSITY WEST
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007-11 BUDGETS
Classroom Laboratory / Computer Classroom II Building and Central Plant Expansion

	FY 2006 REV BUDGET	FY 2006 ACTUAL	FY 2007 REV BUDGET	FY 2008 BUDGET	FY 2009 BUDGET	FY 2010 BUDGET	FY 2011 BUDGET
REVENUE							
Carryforward	\$ 76,300	\$ 76,300	\$ (3,600)	\$ -	\$ -	\$ -	\$ -
TRIF Revenue	1,589,300	1,589,300	1,671,600	1,669,000	1,664,600	1,664,000	1,667,000
TOTAL REVENUE	\$ 1,665,600	\$ 1,665,600	\$ 1,668,000	\$ 1,669,000	\$ 1,664,600	\$ 1,664,000	\$ 1,667,000
EXPENDITURES							
OPERATING BUDGET							
Personal Services							
ERE							
All Other Operating							
TOTAL OPERATING BUDGET	-	-	-	-	-	-	-
CAPITAL BUDGET							
Building Renovation							
Debt Service							
COPs Lease Purchase Payment	1,665,600	1,669,200	1,668,000	1,669,000	1,664,600	1,664,000	1,667,000
TOTAL CAPITAL BUDGET	1,665,600	1,669,200	1,668,000	1,669,000	1,664,600	1,664,000	1,667,000
EXPENDITURES GRAND TOTAL	\$ 1,665,600	\$ 1,669,200	\$ 1,668,000	\$ 1,669,000	\$ 1,664,600	\$ 1,664,000	\$ 1,667,000

INITIATIVE OVERVIEW

The ASU West Proposition 301 initiative funds \$21.6 million of Certificates of Participation (COPs) for two campus improvement projects, a 104,400 gross square foot (GSF) Laboratory/Computer Classroom Building (CLCC II) and a Central Plant expansion. The CLCC II building includes approximately 42,000 net assignable square footage (NASF) of instructional space with a 150 seat lecture hall, two 80 seat classrooms, ten 60 seat classrooms, two 40 seat computer classrooms, five science labs and one computer lab. The Central Plant expansion added 4,800 GSF for a new 1,000 ton chiller, a thermal storage tank, and utility line extensions required to service the CLCC II building.

The COPs were issued in June, 2002. Scheduled payments run through 2021. Construction on the projects was complete for the Spring 2004 semester.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 REVISED BUDGET</i>	<i>FY 2008 BUDGET</i>	<i>FY 2009 BUDGET</i>	<i>FY 2010 BUDGET</i>	<i>FY 2011 BUDGET</i>
REVENUE							
Carryforward	\$ 6,730,914	\$ 9,196,033	\$ 10,995,990	\$ 2,771,913	\$ 1,903,829	\$ 1,459,772	\$ 1,459,772
TRIF Revenue	11,848,500	11,871,286	12,500,168	13,187,673	13,468,941	14,678,215	15,485,517
TOTAL REVENUE	\$ 18,579,414	\$ 21,067,319	\$ 23,496,158	\$ 15,959,586	\$ 15,372,770	\$ 16,137,987	\$ 16,945,289
EXPENDITURES							
OPERATING BUDGET							
Personal Services	\$ 6,179,939	\$ 4,950,234	\$ 7,036,737	\$ 5,588,350	\$ 5,601,684	\$ 5,615,747	\$ 5,630,584
ERE	1,595,458	1,311,816	1,818,036	1,278,391	1,283,070	1,288,011	1,293,225
All Other Operating	3,123,909	2,467,489	2,039,648	1,874,959	2,337,739	2,825,974	3,341,058
TOTAL OPERATING BUDGET	10,899,306	8,729,539	10,894,421	8,741,700	9,222,493	9,729,732	10,264,867
CAPITAL BUDGET							
Building Renovation	3,117,165	-	1,700,000	-	-	-	-
Debt Service	-	-	2,071,491	2,185,423	2,305,621	2,432,430	2,566,214
Conference Center	-	-	2,000,000	-	-	-	-
TOTAL CAPITAL BUDGET	3,117,165	-	5,771,491	2,185,423	2,305,621	2,432,430	2,566,214
EXPENDITURES GRAND TOTAL	\$ 14,016,471	\$ 8,729,539	\$ 16,665,912	\$ 10,927,123	\$ 11,528,114	\$ 12,162,162	\$ 12,831,081
AZUN	\$ 4,562,942	\$ 1,341,790	\$ 4,058,332	\$ 3,128,634	\$ 2,384,884	\$ 2,516,053	\$ 2,654,436
SUMMARY BY INITIATIVE							
Access/Workforce Development	\$ 2,905,637	\$ 3,346,794	\$ 6,215,103	\$ 5,185,423	\$ 5,305,621	\$ 5,432,430	\$ 5,566,214
Growing Biotechnology Initiative (GBI)	806,400	819,980	1,255,127	913,880	913,880	913,880	913,880
e-Learning	3,478,110	3,013,512	2,266,204	1,810,000	1,810,000	1,810,000	1,810,000
ERDENE (Environmental)	2,076,480	1,890,041	2,539,478	1,872,092	1,872,092	1,872,092	1,872,092
Capital Projects	3,474,445	765,204	-	-	-	-	-
University Initiatives	1,275,399	(1,105,992)	4,390,000	1,145,728	1,626,521	2,133,760	2,668,895
EXPENDITURES GRAND TOTAL	\$ 14,016,471	\$ 8,729,539	\$ 16,665,912	\$ 10,927,123	\$ 11,528,114	\$ 12,162,162	\$ 12,831,081

Note: FY 2006 revenue/expense reported prior to official fiscal year close.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
ARIZONA UNIVERSITIES NETWORK (AZUN) SUMMARY

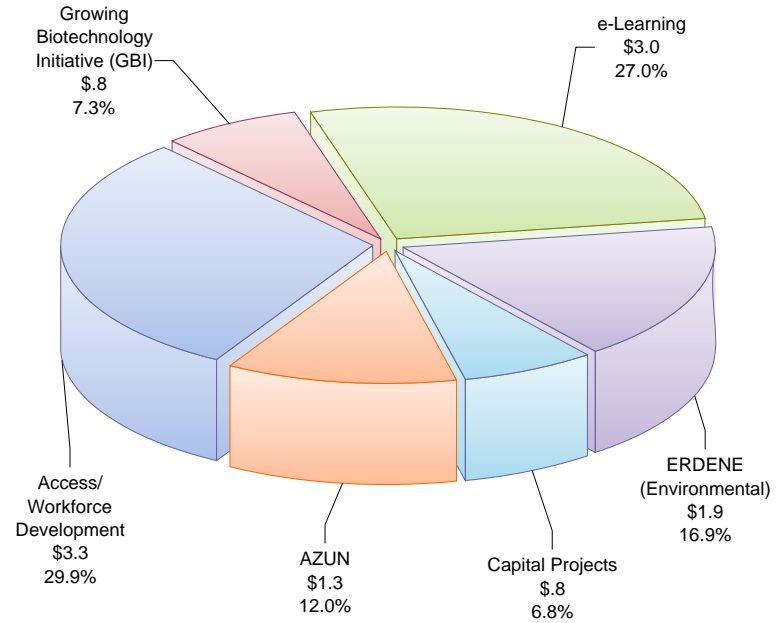
	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 REVISED BUDGET</i>	<i>FY 2008 BUDGET</i>	<i>FY 2009 BUDGET *</i>	<i>FY 2010 BUDGET *</i>	<i>FY 2011 BUDGET *</i>
REVENUE							
Carryforward	\$ 2,531,942	\$ 2,534,652	\$ 3,227,768	\$ 1,312,141	\$ 444,057	\$ -	\$ -
TRIF Revenue	2,031,000	2,034,906	2,142,705	2,260,550	1,940,827	2,516,053	2,654,436
TOTAL REVENUE	\$ 4,562,942	\$ 4,569,558	\$ 5,370,473	\$ 3,572,691	\$ 2,384,884	\$ 2,516,053	\$ 2,654,436
EXPENDITURES							
OPERATING BUDGET							
Personal Services	\$ 1,460,141	\$ 167,912	\$ 1,086,139	\$ 973,664	\$ -	\$ -	\$ -
ERE	501,924	64,664	316,393	281,407	-	-	-
All Other Operating	2,600,877	1,109,214	2,655,800	1,873,563	-	-	-
TOTAL OPERATING BUDGET	4,562,942	1,341,790	4,058,332	3,128,634	-	-	-
CAPITAL BUDGET							
Building Renovation	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-
Conference Center	-	-	-	-	-	-	-
TOTAL CAPITAL BUDGET	-	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 4,562,942	\$ 1,341,790	\$ 4,058,332	\$ 3,128,634	\$ 2,384,884	\$ 2,516,053	\$ 2,654,436

* AZUN FY 2009-2011 assumes renewal of Memorandum of Understanding between ABOR and NAU. Current MOU is set to expire June 30, 2008.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>
REVENUE		
Carryforward	\$ 6,730,914	\$ 9,196,033
TRIF Revenue	11,848,500	11,871,286
TOTAL REVENUE	<u>\$ 18,579,414</u>	<u>\$ 21,067,319</u>
EXPENDITURES		
OPERATING BUDGET		
Personal Services	\$ 6,179,939	\$ 4,950,234
ERE	1,595,458	1,311,816
All Other Operating	3,123,909	2,467,489
TOTAL OPERATING BUDGET	<u>10,899,306</u>	<u>8,729,539</u>
CAPITAL BUDGET		
Building Renovation	3,117,165	-
Debt Service	-	-
Conference Center	-	-
TOTAL CAPITAL BUDGET	<u>3,117,165</u>	<u>-</u>
EXPENDITURES GRAND TOTAL	<u>\$ 14,016,471</u>	<u>\$ 8,729,539</u>
AZUN	<u>\$ 4,562,942</u>	<u>\$ 1,341,790</u>
SUMMARY BY INITIATIVE		
Access/Workforce Development	\$ 2,905,637	\$ 3,346,794
Growing Biotechnology Initiative (GBI)	806,400	819,980
e-Learning	3,478,110	3,013,512
ERDENE (Environmental)	2,076,480	1,890,041
Capital Projects	3,474,445	765,204
University Initiatives	1,275,399	(1,105,992)
EXPENDITURES GRAND TOTAL	<u>\$ 14,016,471</u>	<u>\$ 8,729,539</u>

FY 2006 NAU ACTUAL TRIF EXPENDITURES
(in millions)



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ACCESS / WORKFORCE DEVELOPMENT



NORTHERN ARIZONA UNIVERSITY

September 1, 2006

ACCESS/WORKFORCE DEVELOPMENT



The Northern Arizona University Access and Workforce Development (A/WD) initiative addresses the needs of Arizona employers and their current and future employees. A/WD is focused on areas of demonstrated need as defined by the Governor's Taskforce on Education and the Arizona Partnership for a New Economy with support from the Technology and Research Initiative Fund.

The Northern Arizona University's E-Learning and Access and Workforce Development Initiatives are closely aligned, sharing staffing and leveraging limited funding to accomplish workforce

development goals. Similarly, the NAU efforts are in synergy with the efforts of the Arizona Universities Network (AZUN).

The Access and Workforce Development initiative represents a major commitment by Northern Arizona University to provide education services to Arizona citizens who are time- or place-bound. This initiative:

1. Addresses the teacher shortage with emphases on alternative certification and preparation of mathematics and science teachers
2. Provides engineers with advanced training to support business and industry
3. Increases the number of advance-trained nurses and other health professionals to maintain quality of life
4. Educates information technology professionals to serve the new economy needs of the state
5. Prepares post-baccalaureate business/non-profit managers to be leaders in existing and new businesses
6. Develops and maintains the support infrastructure for future development of degree and certificates responsive to the needs of the new economy.

Contents

Introduction	1
Performance Analysis:	2
Financial Information	3
Infrastructure	4
Advisory Board	4
Learn More	4



Fred Hurst, Vice President for Extended Programs, and Dean for Distance Learning

PERFORMANCE ANALYSIS

18	FY02 Proj	FY02 Act	FY03 Proj	FY03 Act	FY04 Proj	FY04 Act	FY05 Proj	FY05 Act	FY06 Proj	FY06 Act	FY07 Proj	FY08 Proj	FY09 Proj	FY10 Proj	FY11 Proj
<u>Technology Transfer and Industry Collaborations</u>															
Courses/Modules Sold/Brokered		0	2	5	2	0	2	0	2	0	1	1	1	1	1
<u>Workforce Contributions</u>															
Potential New Students Served															
New Teachers		250	460	542	545	807	600	679	700	773	700	700	750	750	750
Nurses/Health Professionals		120	200	266	200	414	300	464	350	540	400	500	500	600	600
Engineers with Advanced Training		20	N/A	Rprtd in AZUN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Business/Non-Profit Managers		44	50	182	60	303	200	442	350	528	400	400	450	450	500
<u>Curriculum Innovations</u>															
Number Degree/Certificate Programs		11	12	19	15	37	20	41	40	41	40	42	44	46	48
Statewide Access (Rural and Urban) (Yes/No)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional/National Global Access		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number New/Revised Courses		75	80	72	100	105	80	153	180	176	40	40	40	40	40
<u>Partnerships/Collaborations</u>															
Number Community College Partners		14	15	16	15	17	16	17	16	19	17	17	17	17	17
Tri-University (ASU,NAU,U of A)		3	3	3	3	3	3	3	3	3	3	3	3	3	3
Number K-12 Partners (Schools/Districts)		30	30	51	30	119	60	127	120	127	120	125	130	135	140
Number Industry Partnerships		2	5	21	5	42	25	75	50	80	50	53	56	59	61

Proposed metrics are based on the expectation of continuous growth in initiative funding over the period FY 2007- FY 2011.

PERFORMANCE ANALYSIS

Work Force Contributions: FY 2006 Objectives and Accomplishments

The objectives for FY 2006 included the expansion of existing programs, development or conversion of programs to the web, increasing student capacity in new and existing programs, and incremental growth in enrollment for the following areas: Education, Health Professions, Business and Public Service.

Overall, FY 2006 enrollments surpassed projections with the expansion of face-to-face programs, creation of new cohorts, growth in web enrollments, more focused marketing and recruitment efforts, and the expansion to new locations and partnerships all contributing factors in the success of these programs.

- Education saw an average growth of 14% in enrollments over FY 2005, with some programs more than doubling enrollments over the prior academic year. New cohorts continue to be established in the Phoenix Metro and Tucson areas to meet student needs.
- The Health Professions also saw an increase in enrollment across the board with the RN to BSN and the Master of Nursing increasing by nearly 20%. The Accelerated BSN doubled the number of students enrolled from 34 to 74 students, and the BAS/BS in Health Sciences increased enrollments by 9% from 175 to 191 students.
- Business and Public Service programs likewise experienced an increase in demand for their programs with the BAILS/BAS in Public Agency Service and the Master of Administration continuing to have strong interest. The latter program responded to student needs by adding the Community Planning emphasis, increasing the total number of emphases offered to seven.

FINANCIAL INFORMATION

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Budget	FY 2006 Actual	FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	FY 2010 Budget	FY 2011 Budget
REVENUE											
Carry Forward	\$0	\$1,490,660	\$2,074,249	\$1,637,061	\$0	\$1,579,182	\$1,143,612	\$0	\$0	\$0	\$0
New TRIF Revenue	3,780,744	3,716,346	3,958,296	2,767,273	2,905,637	2,911,225	5,071,491	5,185,423	5,305,621	5,432,430	5,566,214
TOTAL REVENUE	3,780,774	5,207,006	6,032,545	4,404,334	2,905,637	4,490,407	6,215,103	5,185,423	5,305,621	5,432,430	5,566,214
OPERATING BUDGET											
Personal Services	\$1,758,482	\$2,309,262	\$2,758,700	\$2,485,637	\$1,514,252	\$2,453,798	\$3,277,086	\$2,540,800	\$2,540,800	\$2,540,800	\$2,540,800
Operating	531,632	823,495	1,636,784	644,637	1,391,385	892,997	866,526	459,200	459,200	459,200	459,200
Debt Services *	-	-	-	-	-	-	\$2,071,491	\$2,185,423	\$2,305,621	\$2,432,430	\$2,566,214
TOTAL EXPENDITURES	\$2,290,114	\$3,132,757	\$4,395,484	\$3,130,274	\$2,905,637	\$3,346,795	\$6,215,103	\$5,185,423	\$5,305,621	\$5,432,430	\$5,566,214

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a six-tenths-cent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

*Debt Service will be used to cover bond payments associated with the renovation of the Health Professions/Nursing Building

PERFORMANCE ANALYSIS

Infrastructure: FY 2006 Objectives and Accomplishments

Objectives were established and met in the following areas to support the A/WD initiatives and to keep pace with the demands of program expansion.

Student Services – Assistance is available to students in-person at over 37 offices around the state, by toll-free phone and online chat. Regular contact with current and prospective students has expanded and includes advising calls to students new to web-based degree programs, distributing guidelines for a successful online experience to all web students, and service satisfaction follow-up surveys.

Technical Infrastructure – High-bandwidth demand is satisfied by 200 Mbps bandwidth; Internet 2 connectivity supports the national exchange of instructional and research data; and modem pools serve rural students. Over 3,452 students with limited computer power accessed complex software through the Citrix server. The all-digital ITV System and three digital ITV classrooms at North Tucson, Central Phoenix, and Signal Peak were successfully installed.

Faculty Support – 176 web courses have been developed since FY 2003 with TRIF funding. Over 696 Web classes were taught during Academic Year 2005-2006 using a combination of TRIF and Distance Learning funding with approximately 16% growth in Web enrollments.

Marketing – Conducted comprehensive marketing campaigns to promote TRIF programs through print, radio, web, and cinema advertising in local, statewide and national media; conducted Internet promotional campaigns through web banners and postcards. Contracted with online lead-generation companies for new, qualified leads, and initiated contracts to improve search engine rankings for TRIF online program search. Developed, produced, and distributed brochures promoting A/WD programs.

MANAGEMENT

Programmatic oversight is in the NAU Distance Learning department with the vice president for extended programs and dean of distance learning directly responsible for activities. Due to the size of this initiative, a single point of contact (SPOC) was assigned to coordinate each program and each college also assigned a SPOC to coordinate with Distance Learning. This new management scheme has resulted in a high level of coordination. Integration with ongoing operations helps ensure sustainability.

LEARN MORE

Contact Fred Hurst, Vice President for Extended Programs and Dean for Distance Learning, at Fred.Hurst@nau.edu, or call 928-523-6598. Or Visit the Distance Learning website at <http://www.distance.nau.edu/>

ADVISORY BOARD

The A/WD Advisory Board provides guidance on certificate, degree program and student service needs. The January 2006 meeting of the board was productive, generating many ideas that were shared with the academic departments and members of Distance Learning advising and marketing teams. Key points of discussion centered around the following topics:

- Program needs in the areas of Leadership, Education, Engineering, and the Public Sector;
- Modes of delivery, including a discussion of the pros and cons of web and hybrid courses, as well as cohort programs, with suggestions on how to improve each type of delivery; and
- Suggestions for reaching diverse and prospective student populations.

AWD Advisory Board Members:

Tacy Ashby

Ed.D., Superintendent, Cave Creek Unified School District;

Paul Brynteson

Ph.D., Professor, Health Sciences;

Gypsy Denzine

Ph.D., Associate Dean, College of Education;

Paul Kessel

Vice President, Yavapai College;

Pete Hatfield

C.M.E., Honeywell Global Repair Development Engineering;

Colleen McGregor

B.S., Designation Specialist, Health Systems Development, Arizona Department of Health Services and current NAU student;

Raul Sandoval

Ed.D., Executive Assistant to the President, South Mountain Community College; and

Lt. Jeri Williams

M.Ed., Operations Lieutenant, City of Phoenix Police Department Planning & Research Bureau.

NORTHERN
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e-Learning



NORTHERN
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September 1, 2006

e-Learning

A recent U.S. Department of Education report to the nation on technology and education calls technological literacy “as fundamental to a person’s ability to navigate through society as traditional skills like reading, writing, and arithmetic.” (*Journal of Educational Computer Research*. Volume 24, Number 4/2001) Northern Arizona University’s (NAU) e-Learning initiative addresses this issue through effective and innovative use of information technology to support student learning, providing wider access to education, and infusing technological skill development into all aspects of learning.



The e-Learning initiative contributes directly to the increased access to education across Arizona. Technological skills learners develop will be critical to future success in the new, knowledge-based economy.

e-Learning will prepare residential

and distance students with essential skills for the workplace in our increasingly technology-sophisticated world. We will establish NAU as a leading institution for using e-Learning to enhance educational quality and access.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	4
Management	4
Advisory Boards	4
Learn More	4



Don Carter,
e-Learning Director

PERFORMANCE ANALYSIS

METRICS	FY02	FY02	FY03	FY03	FY04	FY04	FY05	FY05	FY06	FY06	FY07	FY08	FY09	FY10	FY11
	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Proj	Proj	Proj	Proj
<u>Work force Contributions</u>															
Number of new Web courses developed and offered	10	125	150	101/140	130	121	90	141	80	22	100	95	90	85	80
Number of new Hybrid courses developed											15	25	35	45	55
Number of new IT – enhanced courses developed	0	0	20	32	30	42	50	53	60	7	20	25	30	35	40
Number of courses redesigns											15	20	25	30	35
Number of new faculty participating in Web development	25	150	175	117	190	155	120	126	120	241	200	225	250	300	350
Number of new student enrollments in online courses	0	7,110	4,000	9,476	4,500	10,133	11,000	12,381	12,000	14,116	12,500	12,750	13,000	13,500	14,000
Increase in distance student enrollments in online courses	0	0	500	1,703	600	136	500	980	500	568	150	175	200	300	300
Increase in residential student enrollments in online courses				663	150	793	750	1,268	750	844	350	75	50	200	200
Number of student enrollments in hybrid courses											1,000	1,300	1,600	2,000	2,500
Number student enrollments in enhanced courses											2,000	3,000	4,000	5,000	6,000
Increase student academic success in Web courses				5%	0	9%	5%	16%	5%	16%	5%	5%	5%	5%	5%
Increase in student success in enhanced & redesigned courses											5%	5%	5%	5%	5%
Percentage of students satisfied with Web learning	0	0	0	84%	85%	89.2%	90%	87%	90%	87%	91%	92%	93%	94%	95%
Number of graduates with technical literacy skills	0	1,500	1,750	889	2,000	1,633	1,500	1,919	1,500	2,238	2,000	2,050	2,100	2,150	2,200
Number of graduates w/advanced technical literacy skills											1,000	1,200	1,500	1,600	1,700
Number graduate students in internship programs											0	1	1	1	1
Number undergraduate students in internship programs											1	2	2	2	2
<u>Partnerships</u>															
Number of private sector partnerships	0	0	1	0	1	0	1	2	1	0	1	1	1	1	1
Number of scholarly publications/conference presentations											3	5	7	10	10

PERFORMANCE

The e-Learning Initiative has a clear focus on workforce development. Enhancement of technological skills as a result of the integration of technology across the curriculum with a sharpened focus on student learning will prepare NAU graduates for a knowledge and innovation-based Arizona economy.

- Curriculum innovations are critical to developing students' technological skills. These innovations include the development and offering of new online courses, hybrid courses, and course redesign at the undergraduate level. A majority of course offerings at NAU will integrate a technology component into the classroom.
- Advances in student centered e-Learning occur through research and development activities. The e-Learning Center's R&D efforts are reflected in support of faculty through innovation funds and a best practices laboratory. New technologies, teaching practices, and standards of quality centered on learning in a technological environment are a focal point for the e-Learning Initiative.
- Increasing access to higher education for Arizona's citizens is a major goal for e-Learning. Through information and instructional technology, enrollment in online, hybrid, and technology enhanced courses are expected to greatly increase over the next five years. Students who are time-

and-place bound will be able to enroll in NAU courses and degree programs through improved access to the University.

- The impact of the e-Learning Initiative is measured by the number of students with enhanced and advanced technical literacy skills. Multiple indicators (e.g., observations, questionnaires, test score data, interviews, etc.) are characterizing the level of student technological skills.
- Partnerships and collaborations supported by The e-Learning Center are between academic units and distance learning programs at NAU. The e-Learning Center is an integral part of the Arizona Universities Network and provides support for the creation and continuous improvement in online, hybrid, and on-site courses. As new e-Learning technologies emerge, partnerships with corporations are likely to occur to serve business training needs.



FINANCIAL INFORMATION

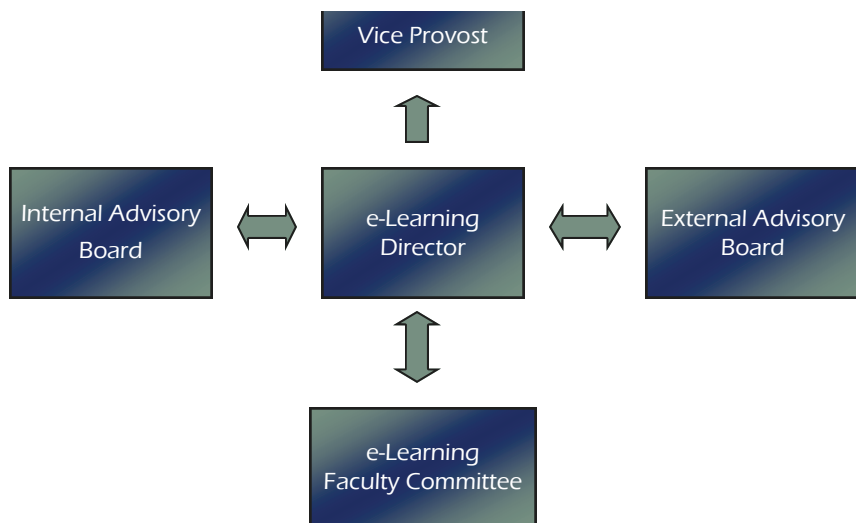
	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Budget	FY 2006 Actual	FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	FY 2010 Budget	FY 2011 Budget
REVENUE											
Carry Forward	\$0	\$674,138	\$637,033	\$831,019	\$1,210,110	\$1,197,355	\$456,204	\$0	\$0	\$0	\$0
New TRIF Revenue	1,354,355	1,161,953	1,704,522	2,160,000	2,268,000	2,272,361	1,810,000	1,810,000	1,810,000	1,810,000	1,810,000
TOTAL REVENUE	1,354,355	1,836,091	2,341,555	2,991,019	3,478,110	3,469,716	2,266,204	1,810,000	1,810,000	1,810,000	1,810,000
OPERATING BUDGET											
Personal Services	\$567,521	\$1,103,269	\$1,310,577	\$1,525,599	\$2,921,612	\$1,697,066	\$2,014,112	\$1,608,092	\$1,608,092	\$1,608,092	\$1,608,092
Operating	112,696	95,789	199,959	470,437	556,498	1,316,446	252,092	201,908	201,908	201,908	201,908
TOTAL EXPENDITURES	\$680,217	\$1,199,058	\$1,510,536	\$1,996,036	\$3,478,110	\$3,013,512	\$2,266,204	\$1,810,000	\$1,810,000	\$1,810,000	\$1,810,000

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

Through e-Learning, NAU strives to increase access and quality of education for all Arizona citizens, thereby developing our workforce and addressing the needs of the Innovation Economy. Specific goals include:

- ◆ Integrate web technology into the learning experience at NAU to enhance technological skills and access to knowledge, and ensure that all NAU graduates achieve a fundamental level of technological competency.
- ◆ Provide technical support and training for faculty in the integration of technology into the classroom.
- ◆ Continue to assess effectiveness of e-Learning technology and develop and implement new strategies to identify and use best practices to take advantage of new technologies.
- ◆ Market and promote e-Learning to students wishing to access educational opportunities via the internet.



LEARN MORE

Contact Don Carter, Director of the e-Learning Initiative, at don.carter@nau.edu, or 928-523-1605. Or Visit the e-Learning Center website at <http://www.nau.edu/elearning>

MANAGEMENT

The e-Learning Center is managed by the Director of e-Learning, Don Carter, who reports to Karen Pugliesi. Karen reports to Bill Grabe the Interim Vice Provost for Undergraduate Studies, for TRIF related activities.

ADVISORY BOARDS

There are two advisory boards for the e-Learning Initiative, one internal and one external.

The e-Learning Internal Advisory Board consists of administrative and faculty leaders on campus who have a vested interest in the success and implementation of the Initiative.

Membership includes the e-Learning Director, the Director of Faculty Development, six faculty (one from each college), two students (one on the Mountain Campus and one Distance Learning), and representatives from each of the following: Academic Chairs Council, Cline Library, Council of Deans, Distance Learning, Information Technology Services, and the Provost’s Academic Computing Advisory Committee.

The e-Learning Faculty Committee, composed of the faculty on the advisory board, is responsible for recommending baseline learning outcomes, addressing standards, selecting courses for redesign, and reviewing internal grant projects.

The External Advisory Board is composed of three members who are leaders in the field of e-Learning to provide guidance and national perspective on teaching and learning using technology.

**NORTHERN
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ENVIRONMENTAL RESEARCH, DEVELOPMENT,
AND EDUCATION FOR THE NEW ECONOMY
(ERDENE)



NORTHERN
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September 1, 2006

ERDENE

Long-term environmental and human health depends on ecological understanding, economic vitality and social values. Environmental Research, Development, and Education for the New Economy (ERDENE) integrates ecological understanding, business acumen and technological ingenuity to sustain the health of our environment and the vitality of our communities.

ERDENE focuses on Northern Arizona University's (NAU) environmental research strengths in five major areas including ecological restoration, water resources, renewable energy technologies, applied research for sustaining rural communities, and comprehensive monitoring and management of complex systems.

ERDENE applies ecological research and knowledge to lessen human impact on the natural world, mitigate previous actions detrimental to our natural heritage, and stimulate economic and community development. The program promotes environmental, economic and community health by addressing real problems in innovative ways.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	4
Management	4
Advisory Boards	4
Learn More	4



Dr. Gary Deason,
ERDENE Director

PERFORMANCE ANALYSIS

METRICS (\$ in millions)	FY02 Proj	FY02 Act	FY03 Proj	FY03 Act	FY04 Proj	FY04 Act	FY05 Proj	FY05 Act	FY06 Proj	FY06 Act	FY07 Proj	FY08 Proj	FY09 Proj	FY10 Proj	FY11 Proj
<u>Return on Investment</u>															
Federal and State Funds	\$4.5	\$5.5	\$4.3	\$4.3	\$4.3	\$4.4	\$5.7	\$12.9	\$6.3	\$3.8	\$5.0	\$5.5	\$6.0	\$6.5	\$7.0
Industrial Dollars	\$1	\$4	\$1	\$4	\$1	\$5	\$1	\$5	\$2	\$1	\$3	\$3	\$4	\$4	\$5
Other Dollars	\$2	\$6	\$2	\$3	\$2	\$5	\$3	\$5	\$3	\$9	\$5	\$6	\$7	\$8	\$9
Qualitative Returns Including Presentations & Publications	10	121	120	180	120	138	130	305	27	119	140	150	160	170	180
<u>Technology Transfer</u>															
Products Generated and in the Marketplace	0	0	0	0	0	49	0	6	2	12	1	3	6	8	10
Business Spinoffs	0	1	1	0	1	1	1	1	2	1	0	0	1	2	3
Patent Apps Generated	0	1	1	0	1	0	1	0	2	0	0	1	2	3	4
Conferences Sponsored	0	14	15	19	15	21	17	28	8	26	3	5	10	15	20
Business Expansions	2	2	2	1	3	5	4	16	8	5	0	1	2	3	4
<u>Work Force Contributions</u>															
Graduate/Postdoc Students in Pipeline or Graduated	35	56	50	87	56	102	60	35	61	38	60	62	65	68	70
High End Baccalaureates in Specific Disciplines	23	38	33	27	38	47	45	23	84	15	6	6	6	6	6
Baccalaureates Produced in Related Disciplines	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	40	42	45	48	50
Certificates Granted	0	0	5	0	5	3	7	73	8	0	5	5	5	5	5
Undergrad Students in Pipeline	0	26	30	126	32	63	35	40	35	231	50	55	60	65	70
Continuing Ed Professionals	0	85	85	312	85	1361	90	142	46	265	120	130	140	150	160
<u>Specific Curriculum Innovations</u>															
New Programs such as Certificates (full time students)	5	3	5	1	6	1	6	0	9	2	0	1	1	1	1
Revised Courses	5	10	6	14	6	16	8	22	9	6	1	3	4	4	4
New Courses (full time students)	5	2	7	9	10	29	10	31	15	12	0	2	3	3	3
New Programs – Participating Professionals	0	0	0	0	0	0	0	0	0	9	1	2	2	2	2
<u>Partnerships</u>															
Community College 2+2 Programs	2	2	3	9	3	7	4	8	5	8	2	4	6	8	10
Tri-University (ASU, NAU, UofA)	4	4	3	6	3	7	4	10	5	9	5	8	12	15	18
Industry/Private Sector Collaborations	13	17	18	73	18	58	24	79	27	48	35	38	40	42	45
Community-based (including tribes)	8	34	25	58	30	51	30	60	46	76	35	38	40	42	45
Regional, Nat'l, International Research and Linkages	5	20	20	41	22	54	25	72	15	69	35	38	40	42	45
Companies identifying the university as a reason to relocate	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3

Anticipated FY 06 Actual are due to increase for Final print by end of August. Awaiting final reporting.

PERFORMANCE ANALYSIS

- ERDENE will focus its efforts on securing new funding in five areas: ecological restoration, renewable energy technologies, rural and tribal community development, water resource management, and environmental monitoring.
- Technology transfer performance covers a broad spectrum of activities including patents, spin-off companies, products, and business expansions. A significant measure of ERDENE's technology transfer productivity is through sponsored conferences and workshops for business, industry, and government agencies.
- ERDENE works closely with the Greater Flagstaff Economic Council and the Northern Arizona Technology and Business Incubator to develop and recruit new sustainable resource focused companies to northern Arizona.
- Workforce contributions are measured by undergraduate and graduate students in the pipeline or graduated with degrees or certificates relevant to area and the number of continuing education professionals participating in training programs offered through ERDENE.
- ERDENE supports student research and critical skill development to enhance preparedness for Arizona's workforce opportunities.
- ERDENE collaborations are measured by the number of partnerships with community colleges, universities, industries, communities, and regional/national/international organizations.

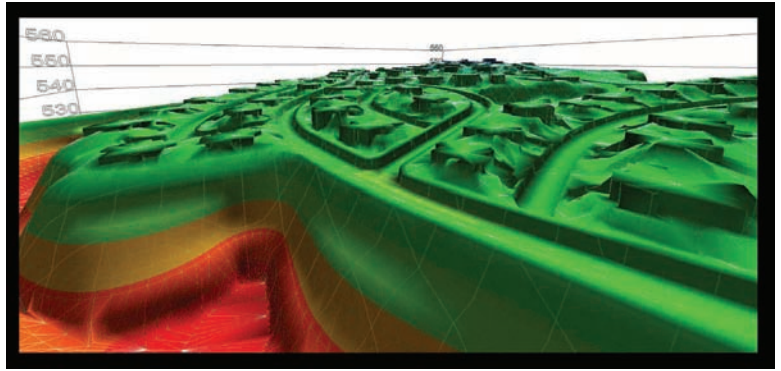
FINANCIAL INFORMATION

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Budget	FY 2006 Actual	FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	FY 2010 Budget	FY 2011 Budget
REVENUE											
Carry Forward	\$0	\$175,540	\$224,067	\$254,812	\$0	\$476,956	\$667,386	\$0	\$0	\$0	\$0
New TRIF Revenue	1,450,500	1,551,412	1,681,405	1,977,600	2,076,480	2,080,472	1,872,092	1,872,092	1,872,092	1,872,092	1,872,092
TOTAL REVENUE	1,450,500	1,726,952	1,905,472	2,232,412	2,076,480	2,557,428	2,539,478	1,872,092	1,872,092	1,872,092	1,872,092
OPERATING BUDGET											
Personal Services	\$1,062,225	\$1,260,419	\$1,426,244	\$1,639,348	\$1,965,615	\$1,425,695	\$2,387,108	\$1,759,766	\$1,759,766	\$1,759,766	\$1,759,766
Operating	212,735	242,466	224,416	259,376	110,865	464,347	152,370	112,326	112,326	112,326	112,326
TOTAL EXPENDITURES	\$1,274,960	\$1,502,885	\$1,650,660	\$1,898,724	\$2,076,480	\$1,890,042	\$2,539,478	\$1,872,092	\$1,872,092	\$1,872,092	\$1,872,092

GOALS

ERDENE goals specifically include:

- ◆ Promote environmental, economic and community health through research, outreach, and education.
- ◆ Address Arizona's environmental and economic issues with a focus on sustainable systems.
- ◆ Support initiatives with specific environmental, economic and social benefits to Arizona citizens.
- ◆ Continue to identify and capture new funding to further the economic development of Arizona.



Wind Resource Modeling

MANAGEMENT

ERDENE director, Gary Deason, reports through the Center for Sustainable Environments to Bill Grabe, Interim Vice Provost for Research & Graduate Studies for TRIF related activities.



ADVISORY BOARD

A new Research and Development Advisory Board has been formed to oversee Growing Biotechnology (GBI) and Environmental Research, Development, and Education for the New Economy (ERDENE) initiatives. This board consists of deans, faculty, and people from off campus with expertise in environmental and biotechnology.

Michael Bittner

Translational Genomics Research Institute

Will Ott

Northern Arizona Technology and Business Incubator

Barry Gold

Gordon and Betty Moore Foundation

Laura Huenneke

NAU College of Engineering and Natural Sciences

David LaRoche,

U.S. Environmental Protection Agency

Edwin Lewis

NAU Department of Chemistry and Biochemistry

Stephanie McKinney,

Greater Flagstaff Economic Council

Mary O'Connell

New Mexico State University Plant and Environmental Science Department

David Patton

NAU Consortium of Professional Schools

Thomas Whitham

NAU Department of Biological Sciences

LEARN MORE

Contact Dr. Gary Deason, ERDENE Director, at the Center for Sustainable Environments at Gary.Deason@nau.edu, or 928-523-4889, or visit any of the following websites to learn more about individual initiatives:

- ◆ Center for Sustainable Environments
- ◆ Sustainable Energy Solutions
- ◆ Ecological Restoration Institute
- ◆ 28 Merriam Powell Center for Environmental Research

<http://www.environment.nau.edu>

<http://ses.nau.edu>

<http://www.eri.nau.edu/cms/>

<http://www.mpcer.nau.edu/smallindex.html>

NORTHERN
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GROWING BIOTECHNOLOGY INITIATIVE (GBI)



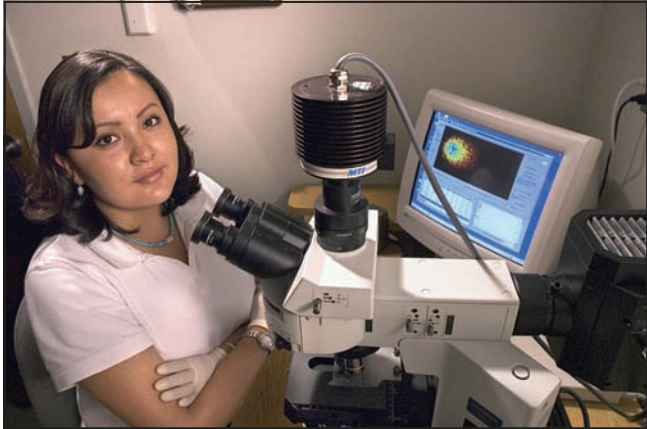
NORTHERN ARIZONA UNIVERSITY

September 1, 2006

GROWING BIOTECHNOLOGY

The Growing Biotechnology Initiative (GBI) enables outstanding research and development in biosciences at Northern Arizona University (NAU) to be translated rapidly and effectively to address critical health issues at the forefront of modern life.

GBI will continue its focus on research in new and emerging diseases and vaccines, forensic genetics, cancer, musculoskeletal and cardiopulmonary rehabilitation, and endocrine systems. It is also expanding specific funding opportunities for product development based on research that has been previously funded.



Monica Yazzie, an undergraduate student studies the role of heavy metals in cancer biology.

These research areas address issues identified by United States Environmental National Institutes of Health (NIH), Environmental Protection Agency (EPA), Centers for Disease Control (CDC), and other leading

organizations as being among the most important health concerns today. Not surprisingly, these issues are also among the "biotechnology platforms" identified in the *2002 Arizona's Bioscience Roadmap*.

GBI's vision is to position Arizona as a global leader in the fast-growing biotechnology industry through research, technology transfer, business recruitment, and workforce development.

An emphasis on student participation in research combined with the high productivity of university researchers, gives NAU a unique position in Arizona to provide cutting-edge research, educate a workforce for the growing bioscience industry, and contribute directly to the growth of the state's industry.

Contents	
Introduction	1
Performance Analysis	2
Financial Information	3
Goals	4
Management	4
Advisory Boards	4
Learn More	4



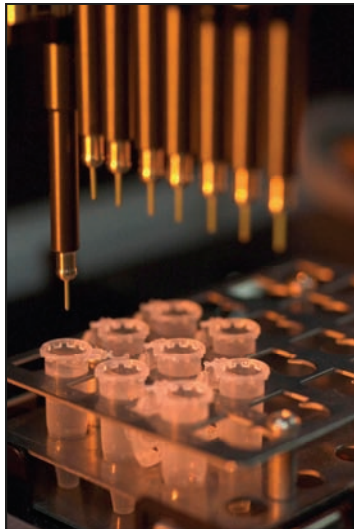
Dr. Richard Coast, Growing Biotechnology Director

PERFORMANCE ANALYSIS

METRICS (\$ in millions)	FY 02 Proj	FY 02 Act	FY 03 Proj	FY 03 Act	FY 04 Proj	FY 04 Act	FY 05 Proj	FY 05 Act	FY 06 Proj	FY 06 Act	FY 07 Proj	FY 08 Proj	FY 09 Proj	FY 10 Proj	FY 11 Proj
<u>Return on Investment</u>															
Increased External Funding - Federal	\$1.4	\$1.4	\$1.5	\$6.3	\$2.0	\$5.6	\$2.0	\$1.3	\$1.5	\$6.0	\$1.7	\$2.5	\$2.5	\$3.0	\$3.0
Increased External Funding - Other-Private	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	\$3	\$5	\$5	\$1.0	\$1.0
Increased Number of Scholarly Publications	7	12	15	0	18	59	20	3-8	20	47	20	30	30	40	40
<u>Technology Transfer</u>															
Patents Generated	2	1	1	2	1	2	1	1	1	3	2	2	2	2	2
Products Generated and in the Marketplace	0	0	1	5	1	0	1	2	1	1	1	2	1	2	2
Business Expansions	0	0	2	0	2	0	2	2	1	1	1	1	1	1	1
Technology Transfer: startup companies created	0	0	0	2	0	1	0	0	0	1	0	1	0	0	1
Industry Partnerships	0	0	0	2	0	2	2	2	3	8	1	1	2	1	2
<u>Economic Development</u>															
Incubation/Formation of Bio-tech Concerns in Flag-staff/Northern Arizona	0	0	1	0	1	0	2	2	1	2	0	0	1	1	2
<u>Work Force Contributions</u>															
Graduate/Postdoc Students in Pipeline	57	60	60	62	60	60	60	25	70	29	10	20	20	25	30
Undergraduate Students with Research Experience	76	80	80	79	80	43	65	53	110	90	70	80	100	110	125
M.S./Ph.D. Graduate Increases	2	1	3	12	3	5	3	8	5	10	3	3	3	3	3
<u>Specific Collaborations</u>															
New Research Collaborations	4	6	6	29	6	3	1	17	2	28	2	2	5	5	7

PERFORMANCE ANALYSIS

- TRIF funds will be leveraged as a result of anticipated new dollars received from agencies, industry, and business.
- Technology transfer measures are based largely on the development and licensing of new technologies and products. GBI will provide specific grant support to faculty for intellectual property development.
- GBI works closely with the Greater Flagstaff Economic Council and the Northern Arizona Technology and Business Incubator to assist in the incubation, formation, and recruitment of biotechnology companies to northern Arizona.
- Workforce development is a major emphasis area for GBI. Recruiting undergraduate and graduate students into the bioscience pipeline and preparing



Environmental Genomics and Genetics Laboratory

them for the biotechnology workforce is a high priority.

- GBI is committed to developing new partnerships with industry, business, universities, national laboratories, and governmental agencies. The number of new collaborations and partnerships in joint research ventures is expected to increase over the next five years as the bioscience industry in Arizona continues to grow.



FINANCIAL INFORMATION

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Budget	FY 2006 Actual	FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	FY 2010 Budget	TFY 2011 Budget
REVENUE											
Carry Forward	\$0	\$363,216	\$510,270	\$18,410	\$0	\$353,276	\$341,247	\$0	\$0	\$0	\$0
New TRIF Revenue	967,002	1,123,132	817,501	768,000	806,400	807,951	913,880	913,880	913,880	913,880	913,880
TOTAL REVENUE	967,002	1,486,348	1,327,771	786,410	829,063	\$1,161,227	1,255,127	913,880	913,880	913,880	913,880
OPERATING BUDGET											
Personal Services	\$216,402	\$377,561	\$706,203	\$696,382	\$111,000	\$345,031	\$866,035	\$630,577	\$630,577	\$630,577	\$630,577
Operating	387,384	598,517	603,157	67,366	695,400	474,949	389,092	283,303	283,303	283,303	283,303
TOTAL EXPENDITURES	\$603,786	\$976,078	\$1,309,360	\$763,748	\$806,400	\$819,980	\$1,255,127	\$913,880	\$913,880	\$913,880	\$913,880

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

GBI will foster biotechnology innovation, discovery, technology transfer, and workforce development.

Specific goals include:

- ◆ Facilitate technology transfer including patents, licenses, and new businesses based in the biosciences.
- ◆ Work closely with the Greater Flagstaff Economic Council and the Northern Arizona Technology and Business Incubator in recruiting and developing new biotechnology business in Northern Arizona.
- ◆ Create and refine courses in biotechnology and related fields to provide the training and experience NAU graduates will need to be productive members of Arizona’s biotechnology workforce
- ◆ Create and maintain partnerships with government, business, and research institutions. Focus on our relationships with University of Arizona and Arizona State University to build the State’s bioscience capacity.



The NAU Greenhouse

MANAGEMENT

GBI’s director, Richard Coast, reports to Dr. Bill Grabe Interim Vice Provost for Research and Graduate Studies for TRIF related activities. Research initiatives within GBI report to Dr. Coast.

ADVISORY BOARD

A new Research and Development Advisory Board has been formed to oversee Growing Biotechnology and Environmental Research, Development, and Education for the New Economy (ERDENE) Initiatives. This board will consist of deans, faculty, and people from off campus, with expertise in environmental biotechnology areas.

Michael Bittner

Translational Genomics Research Institute

Will Ott

Northern Arizona Technology and Business Incubator

Barry Gold

Gordon and Betty Moore Foundation

Laura Huenneke

NAU College of Engineering and Natural Sciences

David LaRoche,

U.S. Environmental Protection Agency

Edwin Lewis

NAU Department of Chemistry and Biochemistry

Stephanie McKinney,

Greater Flagstaff Economic Council

Mary O’Connell

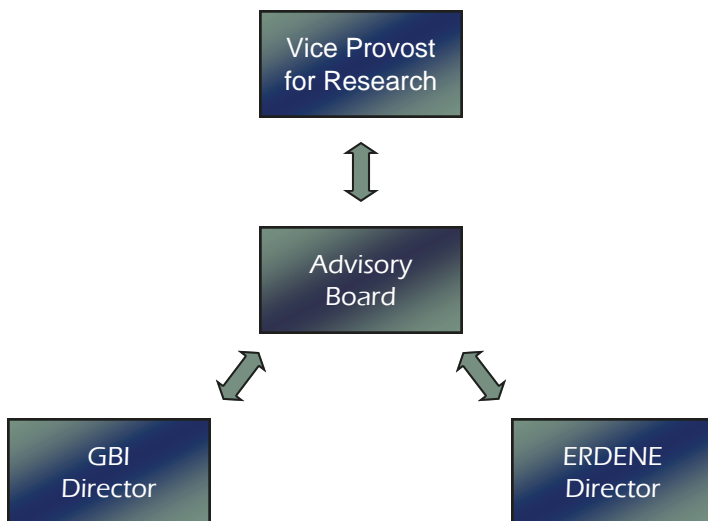
New Mexico State University Plant and Environmental Science Department

David Patton

NAU Consortium of Professional Schools

Thomas Whitham

NAU Department of Biological Sciences



LEARN MORE

Contact Dr. Richard Coast at the Department of Biological Sciences at Richard.Coast@nau.edu, or call 928-523-8018.

NORTHERN ARIZONA UNIVERSITY



UNIVERSITY INITIATIVES



NORTHERN
ARIZONA
UNIVERSITY

September 1, 2006

UNIVERSITY INITIATIVES

Today's rapidly evolving, competitive, and dynamic world requires nations, states, and universities to be flexible, responsive, and innovative within a very short time frame. NAU is prepared for the opportunities and challenges of this environment by setting aside funds for university initiatives and scenarios that may arise.

As with all NAU TRIF initiatives, these funds will be directed to meet the goals of the TRIF legislation and state economic development priorities. It is anticipated that investments will be made within the general context of the four NAU TRIF business plans focused on access/workforce development, E-learning, biotechnology and environmental research, development, and education. University Initiatives will ensure that NAU is positioned to both quickly take advantage of new developments in the research arena, and to provide the infrastructure support needed to ensure the continued growth and success of NAU's TRIF initiatives.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	4
Management	4
Advisory Boards	4
Learn More	4



NAU's proposed Hotel and Conference Center



Dr. John Haeger,
President of Northern Arizona University

PERFORMANCE ANALYSIS



New Laboratory Facility
Expected Completion:
January, 2007

Health Professions
Renovation
Expected Completion:
Winter, 2008



Engineering Building
Occupied:
Spring 2005

PERFORMANCE ANALYSIS

"BIO5 scientists are addressing cancer, diabetes, heart and respiratory diseases..."



Applied Research and Development Building
 Expected Date of Completion:
 Spring, 2007

FINANCIAL INFORMATION

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Budget	FY 2006 Actual	FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	FY 2010 Budget	FY 2011 Budget
REVENUE											
Carry Forward	\$0	\$206,744	\$664,608	\$1,522,437	\$2,988,861	\$3,054,613	\$5,159,772	\$1,459,772	\$1,459,772	\$1,459,772	\$1,459,772
New TRIF Revenue	298,203	590,810	938,517	2,552,961	1,760,983	1,764,371	690,000	1,145,728	1,626,521	2,133,760	2,668,895
TOTAL REVENUE	298,203	797,554	1,603,125	4,075,398	4,749,844	4,818,984	5,849,772	1,145,728	1,626,521	2,133,760	2,668,895
OPERATING BUDGET											
Personal Services	\$36,174	\$72,666	\$62,927	\$385,155	\$1,262,918	\$340,462	\$310,432	\$327,506	\$345,519	\$364,523	\$384,574
Operating	55,285	60,280	17,761	43,618	369,761	(681,250)	379,568	818,222	1,281,002	1,769,237	2,284,321
Building Renovation					3,117,165	0	1,700,000				
Conference Center						0	2,000,000				
TOTAL EXPENDITURES	\$91,459	\$132,946	\$80,688	\$428,773	\$4,749,844	(\$340,788)	\$4,390,000	\$1,145,728	\$1,626,521	\$2,133,760	\$2,668,895

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

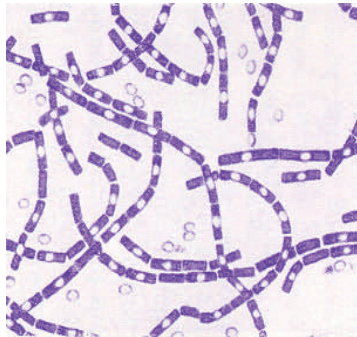
University Initiatives will provide coordinated oversight of all NAU TRIF Initiatives. This oversight will support our established programs, and ensure flexibility to respond to new demands. Our overall goal is to provide infrastructure that enables a coordinated and integrated approach to research, education, connections with business and practical applications in the face of our changing economy,

Specifically we will:

- ◆ Support the Applied Research and Development Building, a showcase for our commitment to sustainability.
- ◆ Support the biology and chemistry laboratory building to meet the rapidly expanding needs of our Growing Biotechnology initiative.
- ◆ Support efforts to expand allied health care program options beyond NAU's campus for Arizona's citizens.
- ◆ Renovate the Health Professions and Nursing buildings, which have been significantly affected by the success of our Access/Workforce Development Initiative.
- ◆ Construct a conference center and hotel complex, which will expand our academic reputation throughout the nation, and will demonstrate our commitment to sustaining and improving economic and community relationships.



NAU student researching data for Paul

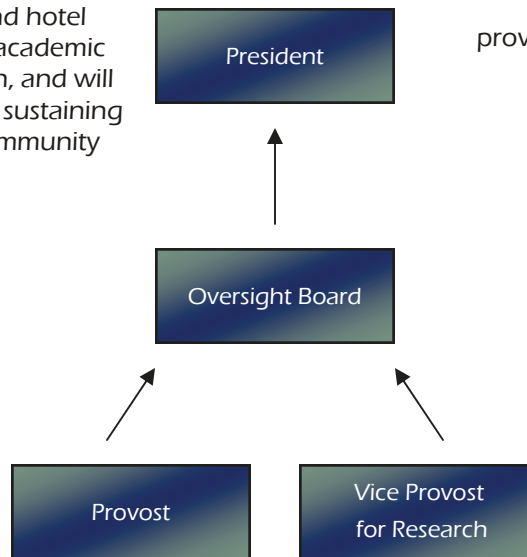


Isolate of Bacillus Anthracis



MANAGEMENT

NAU President, Dr. John D. Haeger, will oversee the University Initiatives activities. He will be assisted in this effort by the Oversight Board, Provost and Vice Provost for Research & Graduate Studies. Appropriate Vice Presidents and Deans will also participate in specific project management.



OVERSIGHT BOARD

The NAU TRIF Oversight Board will provide general direction and guidance to the President regarding NAU's TRIF programming including University Initiatives.

- Oversight Board membership:
- Sandra Johnson**
Flinn Foundation
 - Gary Smith**
Greater Flagstaff Economic Council
 - Donna Cobb**
Arizona Public Service
 - Paul Begovac**
W.L. GORE & Associates, Inc.

LEARN MORE

Contact: Bill Grabe, Interim Vice Provost for Research, Dean of Graduate Studies at William.grabe@nau.edu or 928-523-4340

NORTHERN ARIZONA UNIVERSITY





The Arizona Board of Regents gateway to quality distance learning



September 1, 2006

Arizona Universities Network (AZUN), from its statewide perspective, combines areas of strength within each of the state universities, to make available unique programs that represent multi-university efforts and capabilities. The initiative creates educational opportunities that can be delivered to new populations of potential students, including those in rural areas or who are place-bound and/or time-bound; and those with physical disabilities that prevent residence on campus. AZUN provides a high level of innovative student services that enable distance learning students to be successful in completing their chosen degree programs.

Arizona Universities Network offers students access to distance-delivered degrees and certificates through the public higher education system now and to meet increased demand in the future. Students can earn an undergraduate degree, graduate degree, or professional certification from one of the three state universities. AZUN also serves students who seek non-degree options and those taking classes for personal or professional enrichment.

Students benefit from the many options offered by AZUN:

- Access to easily transferable classes from all three state institutions
- Wide selection of accredited degree programs offered online
- Ease of cross-institution enrollment once admitted to a participating AZUN university
- Ability to select a degree or non-degree track, with a full- or part-time course load
- Automatic transfer of credits earned from the provider institution to the student's home institution
- Flexible learning formats providing anywhere, anytime access
- Consultation via email or phone with a home-institution coordinator when selecting classes or a program of study
- Payment of one tuition bill for classes taken at all three participating institutions
- Use of financial aid for classes taken through AZUN
- Graduation with a degree or certification conferred by the student's home institution.

Contents	
Introduction	1
Performance Analysis	2
Financial Information	3
Management	4
Learn More	4



Fred Hurst, Vice President for Extended Programs, and Dean for Distance Learning

PERFORMANCE ANALYSIS

METRICS	FY 05 Proj	FY 05 Act	FY 06 Proj	FY 06 Act	FY 07 Proj	FY 08 Proj	FY 09 Proj
<u>Workforce Contributions</u>							
Potential New Students Served							
Teachers	20	11	100	293	300	315	331
Nurses	10	73	80	50	60	63	66
Fire Science Baccalaureate Completers	-	-	50	In Progress ¹	50	53	55
Law Enforcement Baccalaureate Completers	-	-	50	In Progress ¹	50	53	55
<u>Curriculum Innovations</u>							
Degree/Certificate Programs (new)	9(4)	9(6)	9(4)	9(3)	9(4)	9(4)	9(4)
Regional/National Global Access	-	yes	-	yes	-	-	-
New/Revised Courses	5	30	40	13	30	30	30
<u>Partnerships/Collaborations</u>							
Community College Partners	17	17	15	19	19	19	19
K-12 Partners (schools/districts)	127	127	30	127	127	127	127
Out-of-State Partners	0	0	1	0	1	1	1
<u>Growth Indicators</u>							
Students Cross-Registering (per year)	250	331	400	370	400	420	441
Web Course Completion Rates ²	TBD	TBD	TBD	91%	-	-	-
Enrollment System-Wide in Electronically-Delivered Courses (on and off campus) ³	42,799	40,615	44,000	49,523	58,500	61,425	64,496
Number of Electronically-Delivered Courses (on and off campus) ³	1,715	1,170	1,800	1,860	2,200	2,310	2,426
Number of Electronically-Delivered Programs System-Wide	45	49	48	56	58	61	64
Number of New Enrollments System-Wide	TBD	-	TBD	8,908	9,000	9,450	9,923
Satisfaction and Quality Measures (Experience Rated as Good or Very Good)	TBD	TBD	TBD	91%	-	-	-

¹ Currently recruiting faculty, building courses, and structuring programs for online delivery.

² Reflects NAU completion rates only; information unavailable for ASU and UA.

³ FY 2005 Actuals revised to reflect academic year numbers only for reporting consistency.

PERFORMANCE ANALYSIS

Program Development: FY 2006 Objectives and Accomplishments

Nursing: Increased capacity, one full-time funded AZUN faculty member. Fall 2005 cohort with Tucson Medical Center started with 10 students; Fall 2006 and beyond will have capacity for 20 students per semester.

Teacher Education: Increasing capacity through the hire of three new faculty members: Early Childhood Education serving the north Phoenix area; B.S. Elementary Teacher Education serving the Central Valley and South Mountain area; and B.S. Elementary Teacher Education serving the Tucson area.

Fire Science and Law Enforcement: Capacity in the Northern Arizona University Bachelor of Applied Science and Bachelor of Arts in Liberal Studies Public Agency Service degree completion programs increased to meet need. Commitment to increase capacity as needed for the future. Degree completion students may now be admitted to the Bachelor of Applied Science and Bachelor of Arts in Liberal Studies Public Agency Service programs. They may complete that program with a concentration in law enforcement or fire science. BAILS/BAS in Administration of Justice approved to be offered as an online degree, and courses are in the initial stages of being developed for online delivery.

Quantitative Math Course Development: Quantitative Reasoning is the new required course, replacing College Algebra, which provides students with a practical understanding of how math is used in business, the humanities and social sciences, and other programs. Northern Arizona University developed a Web-based Quantitative Reasoning course, MAT 114, which was taught in Fall 2005 and Spring 2006 and is scheduled for Fall 2006.

Nurse Educator Program (NED): The second year of the ASU Nurse Educator initiative saw the creation and approval of a Graduate Certificate in Nursing Education. A concentration in the Master's Program for Nurse Educators was also redesigned and approved. The PDA patient tracking system will go-live in Fall 06 which will enhance students' use of technology for clinical purposes.

Secondary Math & Science Teacher Certification Program: Second student cohort implemented in FY 2006 with 10 students successfully completing the program and receiving teacher certification. The electronic portfolio system was created and implemented by all cohort members. This initiative ended effective June 30, 2006; however, the teacher certification program will continue for the 2006-2007 Academic Year under the ABOR ARRO grant titled SOLISTC - Secondary Online Integrated Science Teacher Certification Program.

(Performance Analysis, continued on page 4)

FINANCIAL INFORMATION

	FY 2005 Budget	FY 2005 Actual	FY 2006 Budget	FY 2006 Actual	FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	TOTAL
REVENUE								
Carry Forward	\$1,615,559	\$1,615,559	\$2,531,942	\$2,534,652	\$3,227,768	\$1,312,141	\$444,057	
New TRIF Revenue	\$1,228,962	\$1,228,962	\$2,031,000	\$2,034,906	\$2,142,705	\$2,260,550	\$2,384,884	\$11,667,566
TOTAL REVENUE	\$2,844,521	\$2,844,521	\$4,562,942	\$4,569,558	\$5,370,473	\$3,572,691	\$2,828,941	
OPERATING BUDGET								
Personal Services	\$798,925	\$2,232	\$1,460,141	\$167,912	\$1,086,139	\$973,664	\$676,312	\$2,906,259
ERE	\$208,958	\$751	\$501,924	\$64,664	\$316,393	\$281,407	\$191,132	\$854,347
All Other Operating	\$807,659	\$306,886	\$2,600,877	\$1,109,214	\$2,655,800	\$1,873,563	\$1,961,497	\$7,906,960
TOTAL EXPENDITURES	\$1,815,542	\$309,869	\$4,562,942	\$1,341,790	\$4,058,332	\$3,128,634	\$2,828,941	\$11,667,566

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a six-tenths-cent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

PERFORMANCE ANALYSIS

Program Development (continued)

SOLISTC— Secondary Online Integrated Science Teacher Certification Program: NAU program courses have been formatted into VISTA and are in the process of being revised. The NAU and UA Student Practicum Handbooks have been combined into the AZUN Student Practicum Handbook. Speech Language Pathology certification needs are being met with a full-time faculty member funded by AZUN.

Development and Delivery of Shortened-Format Web Courses: Twenty-two web courses will be offered in the new 7-week format for the first time in Fall 2006. Courses are broadly representative of university academic programs and range from Health Science to Education and Social and Behavioral Sciences.

Development and Delivery of High Capacity Undergraduate Web Courses: Approaches and support mechanisms have been developed to ensure high capacity in critical Web-delivered courses, including high capacity in single-section courses with lead faculty supported by graduate teaching assistants; multiple sections of the same course taught by qualified instructors under the mentoring and supervision of regular faculty; and enrollment management strategies for Web sections to maximize available capacity.

Continue the Development of Competency-Based and Experiential Learning: Competency-based and experiential learning allows students to receive credit for life experience towards degree or certificate completion. Career and technical education, as well as nursing, accept non-credit training and professional experience in lieu of having students complete courses that would be redundant with their prior training and experience. Impediments to expansion of competency-based and experiential learning include a lack of administrative infrastructure, academic standards, and cost implications.

Infrastructure: FY 2006 Objectives and Accomplishments

AZUN Portal Project: The AZUN Web portal project is designed to interconnect the universities' student information systems (SISs) to provide automated admissions, registration, tuition/fee payments and financial aid information for current and prospective students interested in taking courses from the three universities. Phase One of the project, automated student admissions, started in January 2006 with an anticipated revised completion date of November 2006. As of the report date, the universities have completed their definition of requirements, and the vendor was beginning to deliver software interfaces. An evaluation of Phase One will examine proof of concept and performance of participants. Phase Two will consist of the automation of admissions, registration, tuition/fee payments, and financial aid information functions with a tentative completion in the winter of 2008.

LEARN MORE

Contact Fred Hurst, Vice President for Extended Programs and Dean for Distance Learning, at Fred.Hurst@nau.edu or 928-523-6598. Visit the AZUN website at <http://www.azun.net>.

Infrastructure (continued)

AZUN Website: AZUN launched www.azun.net in September 2005. The class/program search has been greatly improved with course feeds from all three universities occurring nightly. The website offers live chat, information on financial aid, billing, and advising.

Student Services: Advising for prospective and current students in online programs has grown significantly over the past academic year. The NAU Distance Learning Service Center advised 36% more enrolled students in Fall 2006 than in Fall 2005. This increased load reflects a growing interest in online programs and the need for non-traditional educational formats. Assistance is available to students by toll-free phone, email, and online chat. Regular contact with current and prospective students has expanded and includes distributing guidelines for a successful online experience to all web students and service satisfaction follow-up surveys.

Articulation: Each of the universities has tables published on the Course Applicability System (CAS) website to show equivalent classes at the other two institutions. Provider credits are automatically sent to the student's home institution and appear as transfer credits on the student's transcript.

Technology: The AZUN website is supported with fully redundant servers as well as a Microsoft IIS web server cluster and a Microsoft SQL server cluster. All AZUN-related data files are stored on an EMC SAN (Storage Area Network). A Cisco Hardware Firewall has been purchased, and implementation is underway. AZUN has established a Tandberg video-conference endpoint at the new North Tucson facility, and a new computer lab at the Signal Peak expansion site.

Marketing: AZUN began advertising in magazines and newspapers around Arizona and in Harkins Theaters, Sky Harbor Airport and malls in the Phoenix area. AZUN promoted AZUN through representation at recruitment events and information meetings. Several billboards were placed at locations around Phoenix and Tucson. Lead generation companies were contracted to provide AZUN with local and national leads. AZUN advertised with KZON and KTAR and underwrote programming on NPR stations from Flagstaff to Tucson. AZUN produced collateral including brochures, promotional/giveaway items, folders, and exhibits.

MANAGEMENT

Programmatic oversight is in the NAU Distance Learning department of Northern Arizona University, with the vice president for extended programs and dean of distance learning directly responsible for activities. Integration with ongoing operations helps ensure sustainability and provides a high level of coordination. The Arizona Board of Regents provides ultimate oversight.



The Arizona Board of Regents gateway
to quality distance learning

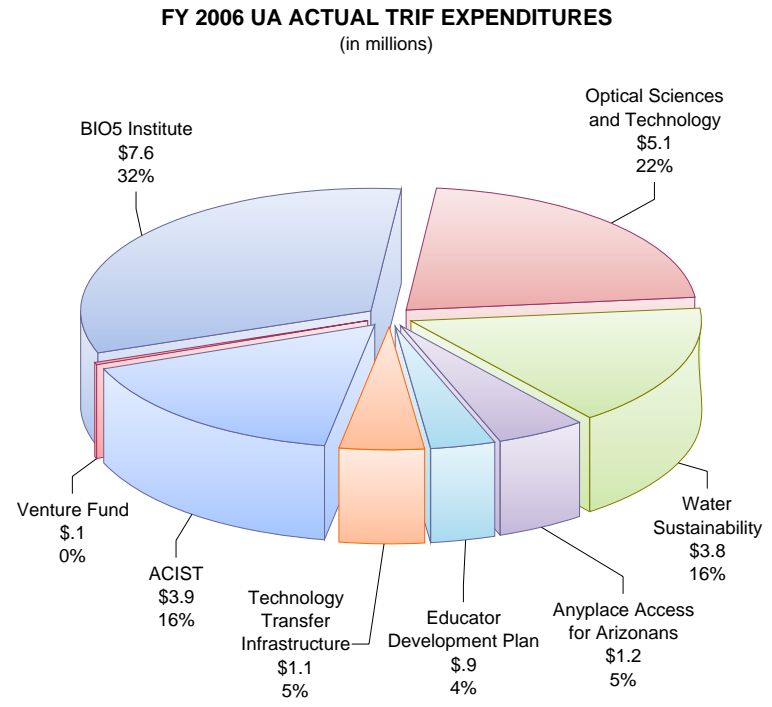
THE UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 REVISED BUDGET</i>	<i>FY 2008 BUDGET</i>	<i>FY 2009 BUDGET</i>	<i>FY 2010 BUDGET</i>	<i>FY 2011 BUDGET</i>
REVENUE							
Carryforward	\$ 5,913,242	\$ 5,800,121	\$ 2,407,908	\$ -	\$ -	\$ -	\$ -
TRIF Revenue	20,200,000	20,238,847	21,311,000	22,483,105	23,719,676	25,024,258	26,400,592
TOTAL REVENUE	\$ 26,113,242	\$ 26,038,968	\$ 23,718,908	\$ 22,483,105	\$ 23,719,676	\$ 25,024,258	\$ 26,400,592
EXPENDITURES							
OPERATING BUDGET							
Personal Services	\$ 13,681,997	\$ 9,704,632	\$ 10,989,132	\$ 9,981,845	\$ 10,731,282	\$ 11,521,937	\$ 12,356,080
ERE	3,638,205	2,851,350	3,303,561	3,130,378	3,370,198	3,623,208	3,890,133
All Other Operating	3,653,040	7,028,078	4,871,286	4,874,261	4,874,261	4,874,261	4,874,261
TOTAL OPERATING BUDGET	20,973,242	19,584,060	19,163,979	17,986,484	18,975,741	20,019,406	21,120,474
CAPITAL BUDGET							
Building Renovation	-	-	-	-	-	-	-
Debt Service	5,140,000	4,047,000	4,554,929	4,496,621	4,743,935	5,004,852	5,280,118
TOTAL CAPITAL BUDGET	5,140,000	4,047,000	4,554,929	4,496,621	4,743,935	5,004,852	5,280,118
EXPENDITURES GRAND TOTAL	\$ 26,113,242	\$ 23,631,060	\$ 23,718,908	\$ 22,483,105	\$ 23,719,676	\$ 25,024,258	\$ 26,400,592
SUMMARY BY INITIATIVE							
BIO5 Institute	\$ 8,323,351	\$ 7,595,173	\$ 5,845,121	\$ 5,000,000 *	\$ 5,000,000 *	\$ 5,000,000 *	\$ 5,000,000 *
Optical Sciences and Technology	5,269,662	5,140,423	3,434,063	3,200,000 *	3,200,000 *	3,200,000 *	3,200,000 *
Water Sustainability	4,494,514	3,813,224	3,944,871	3,200,000 *	3,200,000 *	3,200,000 *	3,200,000 *
Anyplace Access for Arizonans	1,185,212	1,195,801	1,030,394	1,000,000	1,000,000	1,000,000	1,000,000
Educator Development Plan	1,089,267	861,536	1,042,497	800,000	800,000	800,000	800,000
Technology Transfer Infrastructure	1,260,048	1,086,949	1,003,176	800,000	800,000	800,000	800,000
Critical Core Infrastructure	-	-	5,230,200	5,464,621	5,711,935	5,972,852	6,248,118
ACIST	4,301,188	3,869,831	-	-	-	-	-
Venture Fund *	190,000	68,123	2,188,586	3,018,484	4,007,741	5,051,406	6,152,474
EXPENDITURES GRAND TOTAL	\$ 26,113,242	\$ 23,631,060	\$ 23,718,908	\$ 22,483,105	\$ 23,719,676	\$ 25,024,258	\$ 26,400,592

* Venture Fund money will be incorporated into one of these research initiatives.

**THE UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY**

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>
REVENUE		
Carryforward	\$ 5,913,242	\$ 5,800,121
TRIF Revenue	20,200,000	20,238,847
TOTAL REVENUE	\$ 26,113,242	\$ 26,038,968
EXPENDITURES		
OPERATING BUDGET		
Personal Services	\$ 13,681,997	\$ 9,704,632
ERE	3,638,205	2,851,350
All Other Operating	3,653,040	7,028,078
TOTAL OPERATING BUDGET	20,973,242	19,584,060
CAPITAL BUDGET		
Building Renovation	-	-
Debt Service	5,140,000	4,047,000
TOTAL CAPITAL BUDGET	5,140,000	4,047,000
EXPENDITURES GRAND TOTAL	\$ 26,113,242	\$ 23,631,060
SUMMARY BY INITIATIVE		
BIO5 Institute	\$ 8,323,351	\$ 7,595,173
Optical Sciences and Technology	5,269,662	5,140,423
Water Sustainability	4,494,514	3,813,224
Anyplace Access for Arizonans	1,185,212	1,195,801
Educator Development Plan	1,089,267	861,536
Technology Transfer Infrastructure	1,260,048	1,086,949
Critical Core Infrastructure	-	-
ACIST	4,301,188	3,869,831
Venture Fund	190,000	68,123
EXPENDITURES GRAND TOTAL	\$ 26,113,242	\$ 23,631,060



ANYPLACE ACCESS FOR ARIZONANS

THE UNIVERSITY OF ARIZONA.

Arizona's First University.

September 1, 2006

Anyplace Access for Arizonans responds to workforce and workplace needs within the State of Arizona, exploiting new information and communication technologies to extend valuable education and outreach activities to a broad and diverse constituency. With long traditions of statewide cooperative extension and advanced distance education, The University of Arizona has unique opportunities to serve the state through electronically delivered content that can increase people's lifelong earnings, improve their productivity on the job, and solve practical problems in their daily lives.

Our vision is to extend access to *the best* that public higher education can offer to all Arizonans, regardless of place. Both formal and informal education are within the scope of this initiative, which aims to benefit all Arizonans, including not only those who seek higher education for themselves, but also those who seek knowledge and information for use in ordinary work and life settings.

The "RangeView" website, one of many resources providing what Arizonans need when and where they need it.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	3
Management	4
Advisory Boards	4
Learn More	4



*Dr. Sally Jackson
Vice President for Learning &
Information Technologies*

PERFORMANCE ANALYSIS

Metrics	FY 2002	FY 2002	FY 2003	FY 2003	FY 2004	FY 2004	FY 2005	FY 2005	FY 2006	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	projected	actual	projected	actual	projected	actual	projected	actual	projected	actual	projected	projected	projected	projected	projected
<i>Return on Investment</i>															
Federal funds awarded	\$0		\$302K	\$339K		\$945K	\$1.0M	\$848K	\$1.1M	\$1.2M	\$1.3M	\$1.4M	\$1.5M		
State funds awarded	\$3K		\$15K	\$33K		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Corporate funds awarded	\$0		\$10K	\$0		\$0	\$0	\$0	\$10K	\$20K	\$30K	\$40K	\$50K		
<i>Access/Workforce Contributions</i>															
Number graduate students enrolled within initiative	0	0	0	19	20	37	73	161	147	177	200	210	220		
Number graduate degrees awarded	0	0	0	0	0	0	0	0	19	18	25	30	35		
Number certificates granted	0	0	0	0	0	0	0	9	50	50	100	100	100		
Number continuing education professional students	0	0	0	0	0	0	70	224	120	200	200	200	200		
<i>Curriculum Innovations</i>															
Number of newly revised courses offered	0	0	0	0	0	8	4	10	4	4	4	4	4		
Number new certificates offered	0	0	0	0	0	2	1	1	1	0	1	0	1		
Number new online courses offered	0	0	10	19	19	28	33	28	30	30	30	30	30		
Number new online degree programs offered	0	0	0	2	2	1	1	1	0	1	0	1	0		
<i>Other Performance Metrics for this Initiative</i>															
Special program fees collected	\$0		\$0	\$0		\$179K	\$240K	\$243K	\$240K	\$240K	\$240K	\$240K	\$240K	\$240K	\$240K
Number undergraduates employed in TRIF projects	14	19	19	17	17	13	12	5	12	12	12	12	12	12	12
Electronic extension & workplace resources created	0	0	1	2	2	1	1	1	1	1	1	1	1	1	1
Number of users of extension & workplace resources	0	493	493	58,000	58,000	103,000	154,000	156,055	200,000	250,000	300,000	350,000	400,000		
Number enrollments in revised courses	0	0	0	0	0	5,300	11,000	13,684	15,000	19,000	21,000	23,000	24,000		
New instructional tools acquired or created	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2
<i>Other University-wide Impacts of Initiative</i>															
Total supported web & hybrid courses	693	1856	2083	2083	2177	2300	2400	2500	2500	2500	2500	2500	2500	2500	2500
Number enrollments in web & hybrid courses		20,450	24,528	33,353	37,400	39,100	40,800	42,500	42,500	42,500	42,500	42,500	42,500	42,500	42,500

Note: Projections through FY 2005-2006 based on Business Plan approved January 2003; new metrics have been added reflecting new goals and expectations.

PERFORMANCE ANALYSIS

During fiscal years 2002 through 2006, Anyplace Access to Arizonans contributed all of the following to the local and statewide infrastructure for workforce and workplace support.

- ◆ Recruited 12 technical experts with varied specialties needed for producing high quality distance education and high value information resources
- ◆ Created an online PHD in Nursing, the first such program in the US, plus other nursing programs
- ◆ Assisted grant-funded projects bringing more than \$2.7M to the University and the State, including projects to preserve endangered Native American languages, projects to improve science instruction, projects to develop health education programs, and others
- ◆ Created a rich online collection of active learning objects to support science teachers at middle-school and high-school levels
- ◆ Developed digital library resources and introduced innovative new library services such as online reference
- ◆ Introduced important new tools for online learning that now support over 77,000 enrollments in more than 3000 individual courses
- ◆ Created web pages and web-enabled databases to support working professionals, such as an interactive Emergency Medicine website, in Spanish, that now offers over 500 educational programs to more than 150,000 users

FINANCIAL INFORMATION

	FY 02	FY 03	FY 04	FY 05	FY 06	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11
	Actual	Actual	Actual	Actual	Budget	Actual	Revised Budget	Budget	Budget	Budget	Budget
Carry Forward	\$0	\$907,668	\$187,618	\$103,886	\$25,212	\$33,570	\$0	\$0	\$0	\$0	\$0
New TRIF Revenue	\$972,919	\$959,744	\$1,004,778	\$1,003,088	\$1,160,000	\$1,162,231	*\$1,030,394	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Total Revenue	\$972,919	\$1,867,412	\$1,192,396	\$1,106,974	\$1,185,212	\$1,195,801	\$1,030,394	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Personal Services	\$8,251	\$703,016	\$785,471	\$952,071	\$903,288	\$913,877	\$960,394	\$930,000	\$930,000	\$930,000	\$930,000
Operating	\$57,000	\$976,778	\$303,039	\$129,691	\$81,924	\$138,324	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000
Capital	\$0	\$0	\$0	\$0	\$200,000	\$143,600	\$0	\$0	\$0	\$0	\$0
Total Expenditures	\$65,251	\$1,679,794	\$1,088,510	\$1,081,762	\$1,185,212	\$1,195,801	\$1,030,394	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000

*To match HB 2661 General Adjustments given to state-funded employees, \$30,394 from the Venture Fund was allocated to this initiative for its personnel..

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

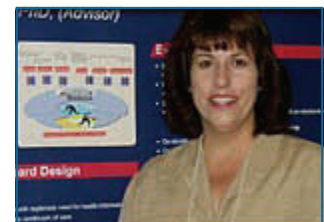
GOALS

Goal 1. Making advanced degrees and certificates available at a distance from the campus, as in:

- Nursing & other Health Sciences
- Optical Sciences & Engineering
- Biological Sciences & Biotechnology
- Information Resources in Library Science
- Business, Law, and Education



Emergency Medicine courses in Spanish

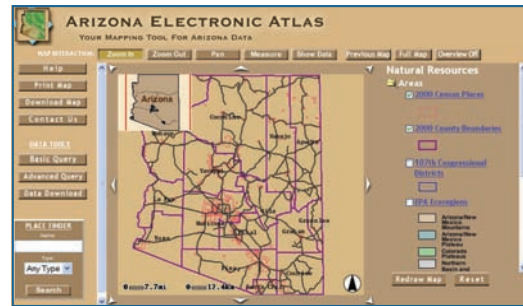


Online Nursing graduate programs

GOALS (continued from page 3)

Goal 2: Creating specialty information resources that can increase on-the-job productivity, as in resources such as:

- Electronic agricultural extension
- Arizona Electronic Atlas
- Active learning objects for K12 teachers
- Online library reference & digital collections
- Ask-an-expert web sites

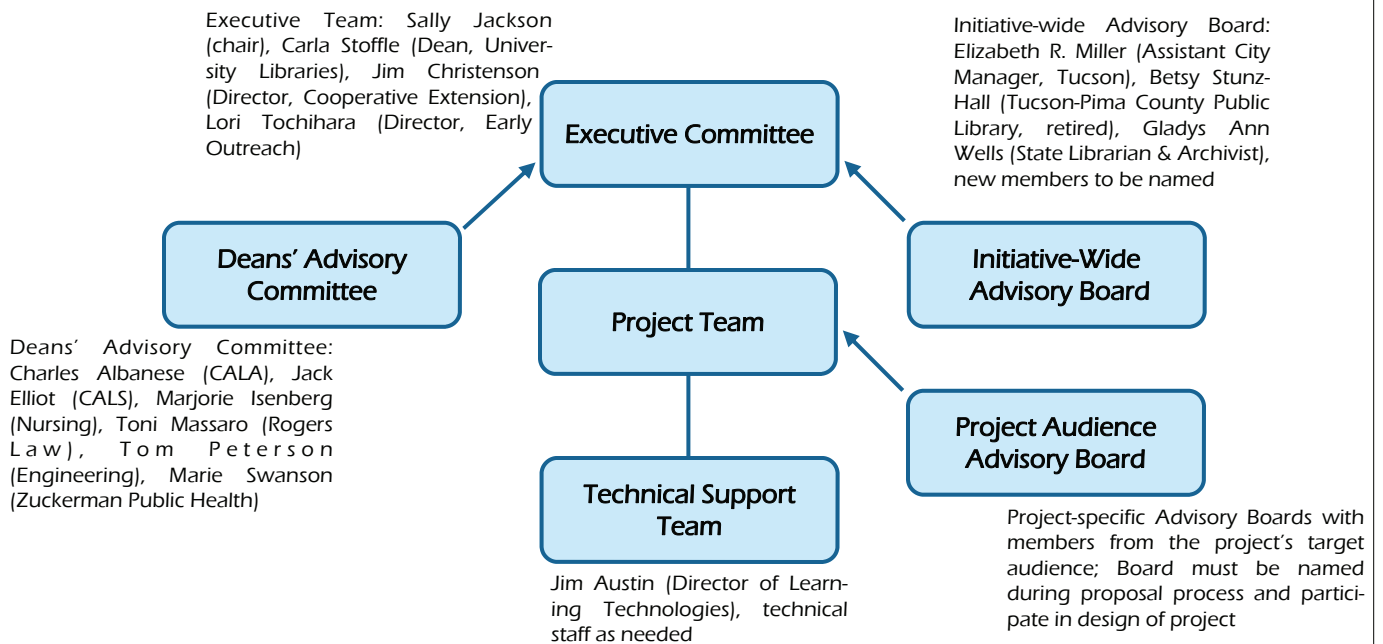


Screenshot for interactive Arizona Electronic Atlas, a rich repository of information about the state.

MANAGEMENT

All UA TRIF initiatives report to Dr. Leslie Tolbert, Vice President for Research, Graduate Studies, and Economic Development. Direct oversight of this initiative is assigned to Dr. Sally Jackson, Vice President for Learning and Information Technologies and Chief Information Officer. Project Teams are composed of faculty and other academic personnel, and Technical Support Teams are formed from expert technical staff within the Learning Technologies Center and other academic support units.

ADVISORY BOARDS



LEARN MORE

Contact Dr. Sally Jackson, Vice President for Learning & Information Technologies, at sjackson@u.arizona.edu or 520-626-7418, or visit <http://trif.arizona.edu/access>.

Contact Dr. Leslie Tolbert, Vice President for Research, Graduate Studies, and Economic Development, at tolbert@u.arizona.edu or 520-621-3513.



ACIST

THE UNIVERSITY OF ARIZONA.

Arizona's First University.

September 1, 2006

The ubiquitous use of computer systems in modern society has led to a vast array of data, from multiple sources and in multiple forms, that must be acquired, integrated, manipulated, transmitted, and used by a wide variety of users. Thus, data management and storage, cyber security, and human-computer interaction have become significant challenges.

From 2001 to 2006, the Arizona Center for Information Systems and Technology (ACIST) brought researchers from multiple colleges in the University of Arizona together for research, design, and development of computer and software systems that manage complex data, ensure integrity of the data as they are transmitted in cyber space, and support their presentation and manipulation through mechanisms for user-friendly visualization and "smart" comprehension.

The vision for ACIST was to develop world-class expertise and capabilities in the design and development of systems that manage complex data while supporting its presentation through better user visualization and understanding.

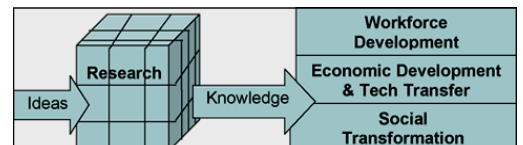
GOALS

The goals of ACIST were:

- ♦ generating grant as well as industry funding to advance research along three dimensions,
- ♦ supporting workforce development in new disciplines (Geographical Information Systems and Linguistics),
- ♦ establishing labs in new areas to support future research collaborations in human computer interaction, and
- ♦ supporting outreach through conferences, workshops, and student expos and camps.

Contents

Introduction	1
Goals	1
Performance Analysis	2
Financial Information	3
Management	4
Advisory Board	4
Learn More	4



PERFORMANCE ANALYSIS

PERFORMANCE MEASUREABLES/DELIVERABLES	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual
Number of new faculty experts attracted	0	2	0	5	2
New graduates from ACIST related programs	0	69	256	224	100
ACIST graduates benefiting from minors in related areas	25	50	100	77	75
Undergraduates taking non-technical minor	50	100	150	111	75
Growth in ACIST related graduate enrollment	5	5	5	4	6
Curriculum innovations program implemented	P1	39	40	6	2
Government project grants obtained	0	0	0	\$3.5M	\$1.6M
Grants/Contracts from industry	\$120K	\$234K	\$1.3M	\$310K	\$460K
Value of Sponsorship obtained	\$1.0M	\$4.8M	\$2.1M	0	0

PERFORMANCE ANALYSIS

- ◆ Generated over \$16M in grant funding by leveraging Prop 301 funds.
- ◆ Established a MS program in Geographical Information Systems.
- ◆ Established 3-D modeling and prototyping facility at Triestman Center.
- ◆ Received Congressional funding in the amount of \$1M for a National Network Security Testbed.
- ◆ Leveraged \$700K grant from the National Science Foundation for an Active Object-Based Digital Library for Microeconomics Education.
- ◆ Disseminated Experiments in Economics with the Econport Digital Library. Work from this seed grant resulted in a \$382K grant from NSF.
- ◆ Leveraged a \$122k grant using grant of \$30k from ACIST under "Intelligent Topology Control and Energy Provisioning."

Activities since 2005 August, when ACIST initiative was formally closed and activities phased out:

- ◆ Trained 10 Life Science and IT students in summer 2006, by pairing them into two person teams on 5 life science projects (sponsored by ACIST and BIO5).
- ◆ Generated \$460K matching grants for \$300K of Prop 301 investment. Funds received from GM, Ford, SAP, Raytheon, Kaiser Permanente, Flandrau Science Center, and US State Department.
- ◆ Trained 220 K-12 students (from 6 years to 17years) through 6 summer camps and exposed them to Information Technology applications. The Hispanic population was significantly serviced through these programs.
- ◆ Funded over 10 students, under summer internship programs, who provided support to small business and not-for-profit organizations in Tucson.
- ◆ Developed a web-based faculty expertise database for access by students and the business community.

FINANCIAL INFORMATION

	FY2002 Actual	FY2003 Actual	FY2004 Actual	FY2005 Actual	FY2006 Rev. Budget	FY2006 Actual
Carry forward	\$0	\$1,682,413	\$1,526,929	\$887,541	\$921,188	\$921,188
New TRIF Revenue	\$3,864,703	\$4,131,026	\$4,220,089	\$4,383,731	\$3,380,000	\$3,386,500
Total Revenue	\$3,864,703	\$5,813,439	\$5,747,018	\$5,271,272	\$4,301,188	\$4,307,688
Actual Revenue	\$3,864,703	\$5,813,439	\$5,747,018	\$5,271,272	\$4,301,188	
Personal Services	\$556,463	\$1,882,241	\$2,342,309	\$2,629,665	\$2,749,502	\$2,072,524
ERE	\$74,656	\$190,774	\$535,383	\$623,331	\$500,000	\$498,204
Operations	\$1,551,171	\$2,213,495	\$1,981,785	\$1,097,088	\$100,000	\$880,803
Debt Service					\$951,686	\$418,300
Capital						
Total Expenditures	\$2,182,290	\$4,286,510	\$4,859,477	\$4,350,084	\$4,301,188	\$3,869,831

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a six-tenths-cent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

MANAGEMENT

The Arizona Center for Information Science and Technology (ACIST), formerly known as the Internet Technology Design and Commerce Institute (ITCDI), was established by the University of Arizona in 2001 and initially managed by Dr. Tom Peterson, Dean of the College of Engineering, and a management committee from five colleges.

In March 2005, Dr. Mohan Tanniru, Head of the Management Information System Department, assumed the direction of ACIST. Dr. Tanniru reported to Dr. Leslie Tolbert, the Vice President for Research, Graduate Studies, and Economic Development. Reporting to Dr. Tanniru were: Assistant Director of Operations and Finance, and ACIST Program Coordinator. In fall 2005, the decision was made to close the ACIST program. No new projects were begun and existing projects were gradually phased out during FY 2006.

ACIST BOARD MEMBERS (MARCH 2005—SEPTEMBER 2005)

- Mr. Chris Verne, Storage and Software Development Executive, IBM
- Mr. Jerry Brown, VP of Engineering, Raytheon Missile Systems
- Mr. Mike Snow, Senior VP of Development, Misys Healthcare
- Mr. David Aungle, VP, Global Infrastructure, CISCO Systems
- Mr. Steven O'Neil, Tech Transfer, University of Arizona
- Mr. Larry Aldridge, Partner, Valley Ventures
- Mr. Bob Hagen, President, Southern Arizona Technology Council
- Mr. Bill Roach, SCORE
- Mr. Ron Schott, Thought Leader Executive - Arizona Technology Council
- Mr. Steve Peters, President, Community Information and Telecommunications Alliance
- Mr. German Fuentes, Engineer/Scientist for Avionics Communication Systems Design, Boeing
- Mr. Anthony King, Senior Director, Information Technology, Ventana Medical Systems
- Ms. Stephanie Bader, QBG Service and Technical Support Leader, Intuit
- Dr. Bernd Fisher, Director of Science and Technology, German Embassy
- Mr. Jim Connelly, Director of Library Production and QC, Sanofi-Aventis
- Dr. Jose Santiago, Senior Vice President and Chief Medical Officer, Carondelet Hospital
- Mr. Gordon Bennett, President, AMIT (Aerospace, Manufacturing, IT Cluster) (Merger of ITASA and SAIAA)
- Mr. Steven Gordon, Technology Specialist, NY - Microsoft
- Mr. Robert Pinkham, VP of Marketing, Calance
- Mr. Ted Fechtl, Fort Huachuca
- Dr. Vicki Chandler, Director, BIO5, U of Arizona
- Dr. Michael Grieves, CEO, Interactive Frontiers
- Mr. Alex Mautner, Arizona MicroSystems

LEARN MORE



Contact Dr. Mohan Tanniru, former ACIST Director, at mtanniru@eller.arizona.edu or 520-621-2784; or Dr. Leslie Tolbert, Vice President for Research, Graduate Studies, and Economic Development, at tolbert@email.arizona.edu or 520-621-3513 .

Visit the ACIST website at www.acist.web.arizona.edu



TECHNOLOGY AND RESEARCH INITIATIVE FUND
(TRIF)

BIO5™

THE UNIVERSITY OF ARIZONA®

Arizona's First University.

September 1, 2006

BIO5™ Institute



BIO5 faculty member Dr. Rod Wing (left) collaborates on the sequencing of the maize and rice genomes to improve the yield and nutritional quality of crops.



BIO5 will house the Arizona Proteomics Consortium, one of only a handful of such facilities in the United States, which is available to academic and private sector investigators.



BIO5 supported the Summer FUSION program, which introduces youngsters to the many wonders of science.

By bringing together some of the world's top scientists in agriculture, medicine, pharmacy, basic science, and engineering, BIO5 encourages significant scientific achievement that improves lives and stimulates economic development.

BIO5's new home, the Thomas W. Keating (TWK) Bioresearch Building, opening fall 2006, sets a new standard in design and research interaction, fostering interdisciplinary, translational research among diverse fields in a single facility. The confluence of research normally housed separately sparks ideas and solutions that might not otherwise develop and that research – combined with BIO5's industry and K-12 education partnerships – accelerates the process of discovery and the growth of Arizona's biotechnology industry.

Researchers associated with BIO5 tackle complex and pressing problems: how to diagnose, treat and prevent disease; how to better feed the world; and how to maintain livable environments. Through its programs in bioengineering, drug discovery, genome structure and function, and quantitative biology, BIO5's scientists address cancer, diabetes, heart, neurological and respiratory diseases; develop new diagnostic tools; improve yield and nutritional quality of crops; and develop plants as sources of pharmaceuticals.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	3
Management	4
Advisory Boards	4
Learn More	4



Dr. Vicki Chandler
BIO5 Director

PERFORMANCE ANALYSIS

BIO5 METRICS (\$ in Millions)	FY 02 Proj	FY 02 Actual	FY 03 Proj	FY 03 Actual	FY 04 Proj	FY 04 Actual	FY 05 Proj	FY 05 Actual	FY 06 Proj	FY 06 Actual	FY 07 Proj	FY 08 Proj	FY 09 Proj	FY 10 Proj	FY 11 Proj
Return on Investment															
Federal Grants Received [1]	\$2.00	\$1.40	\$4.00	\$12.60	\$6.00	\$22.50	\$8.00	[3] \$25.5	\$25.00	\$82.1 (\$26.5)	\$35.00	\$45.00	\$55.00	\$65.00	\$75.00
Research Grant Proposals Pending [2]		\$19.10		\$21.50		\$43.30		\$60.40	\$55.00	\$218.3 (\$88.7)					
New Faculty Hired	5	7	5	8	5	8	3	6	6	6	4	4	4	4	4
Research Infrastructure Support		\$0.00		\$3.00		\$2.60		\$0.70	\$0.00	\$0.00					
SBIR/STTR Grants		0		0		2	2	1	2	2					
Corporate Contracts											\$1.10	\$1.20	\$1.30	\$1.40	\$1.50
Gifts										\$0.20	\$0.10	\$0.20	\$0.30	\$0.40	\$0.50
Economic Development															
Corporate Sponsored Contracts		\$0.00		\$0.10		\$0.20		[3] \$0.3	\$1.00	\$4.1 (\$0.4)					
Industrial Interactions		2		64		96	90	129	125	127					
Industrial Collaborations		2		6		12	12	40	20	42					
Technology Transfer & Industry Collaborations [4]															
Invention Disclosures		0		57		46	50	65	50	46 (30)	22	24	26	28	28
Licenses or Options		0		75		17	20	25	20	17 (7)	4	5	6	7	8
U.S. Patent Applications		1		37		63	60	50	60	56 (37)					
U.S. Patents Issued		0		7		11	10	10	10	6 (4)					
1/2 of BIO5 Faculty working with Office of Technology Transfer										25	18	20	22	24	25
New Companies Formed										1	1		1		1
Seminars on Tech Transfer or Entrepreneurship	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
New Interactions with External Parties										33	22	24	26	28	30
New Collaborations Executed with External Parties										4	5	6	7	8	9
Workforce Contributions															
Training Grants Obtained or Renewed				3		2	2	1	2	1	1	1	2	2	3
Undergraduate Degrees Awarded		0		658		705	700	733	735	1014					
Undergraduates with Research Experience [5]		0		229		234	235	243	245	278					
Graduate Degrees Awarded		0		266		280	270	285	285	420					
Graduate Students Enrolled		0		1,183		1,299	1,300	1,341	1,750	1,268					
Undergraduates Training in BIO5 Research Labs										231	214	218	222	226	228
Non-UA Undergraduate Internships in BIO5 Labs										42	24	25	26	26	27
Graduate Students Training in BIO5 Labs										290	250	262	275	288	302
Postdoctoral Fellows Training in BIO5 Labs										137	150	152	154	156	158
Graduate Students participating in research in Bioindustry Facilities										43	40	41	42	43	44
Specific Curriculum Innovations															
K-12 Teachers Involved in Research										31	15	15	15	18	18
K-12 Teachers Involved in Teacher Training										177	90	95	100	130	150
K-12 Teachers Involved in Outreach Programs & Science Exhibits										12	8	10	12	15	15
K-12 Students Benefiting from Teacher Training										25,650	5475	6075	6675	7375	7875
K-12 Students Participating Directly in Activities										9,432	3700	3700	3800	4000	4200
New Activities Developed for K-12 Outreach										6	4	4	5	6	6
Outreach Grants Obtained or Renewed										1	1	1	1	2	2
Promoting Life Science Potential															
Media Coverage [6]		0		79/12		70/44	70/15	64/15	70/15	97/20					
Web Enhancements		0		2		1	1	4	2	8					
Presentations/Exhibits		0		19		26	25	25	25	52					
Political Outreach [7]		0		21		7	10	21	20	27					
Other Knowledge Transfer															
Workshops and Conferences Supported										7	3	3	3	3	3

[1] Dollars obtained in indicated fiscal year from federal, state and private competitive grants by all BIO5 faculty. Amount in parenthesis indicates dollars for faculty receiving TRIF support.

[2] Dollars awarded or under review from competitive research proposals for all BIO5 faculty. Amount in parenthesis indicates dollars for faculty receiving TRIF support.

[3] Corporate Sponsored contracts for FY05 included foundation and state grant activity. FY05 amounts have been corrected.

[4] Data represents activity of all UA life science departments for FY02 - FY06. Data in parenthesis and projected in FY07 - FY11 represents BIO5 faculty only.

[5] Number of undergrads participating in formal research experience programs (UBRP, MARC, etc.)

[6] Newspaper, radio, TV, web stories / background briefings and presentations

[7] Includes formal events and individual briefings, presentations

PERFORMANCE ANALYSIS

BIO5 continues to significantly leverage TRIF funds to improve Arizonans’ lives by conducting cutting edge research, driving discoveries to market, and preparing students for careers in science and technology. Our reported accomplishments have met or exceeded the metrics from the first 5-year and current business plan.

Return on Investment (ROI): Our faculty continue to be nationally competitive in garnering research dollars. During the first 5 years, \$8.6 million in TRIF funds recruited 35 and retained 7 faculty—these faculty brought in \$89.5 million in research dollars over this period, better than 10-fold leveraging of these funds. Previously, we only projected and reported dollars for these faculty directly supported by TRIF funds. However, BIO5 activities impact all of our faculty’s abilities to garner research support. This year we begin to report dollars obtained for all BIO5 faculty, including dollars obtained by faculty directly supported by TRIF.

Technology Transfer and Industry Collaboration: BIO5 facilitates the commercialization of new products and processes, as well as the development of the biotechnology industry by promoting interactions among faculty, students, and industrial scientists. We partner with the Office of Technology Transfer and UA Eller College of Management. This year one startup company was ABOR approved and our faculty are actively engaged in establishing 6 additional

companies. Nearly two-thirds of the invention disclosures and patent activity in life sciences are by BIO5 faculty.

Workforce Contributions: A critical component of economic development is a workforce to meet the needs of Arizona’s growing bioscience industry. Our workforce initiatives from undergraduate through post-graduate are developed in direct response to industry needs and provide students with exciting experiences that enhance their learning and career opportunities. BIO5 sponsors internships that expose students to industry settings and community college, high school students and teachers to cutting-edge research. BIO5 seeds new training programs (several of which are now federally funded) and develops new courses. Newly implemented online systems are attracting more top bioscience students to the UA and expanding interactions among UA scientists and other researchers in academia and industry.

K-12 Science and Math Education: To enhance K-12 science and math curricula, BIO5 is providing teachers and students in schools all over Arizona access to UA science and math resources. In addition to continuing its successful programs that impacted 177 teachers and 25,650 students throughout the state this year, BIO5 introduced Science Source, a public science outreach database that provides an easy-to-use web-based portal to all of the UA science and math resources for parents, teachers, and the young people they influence.

FINANCIAL INFORMATION

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Budget	FY 2006 Actual	Revised FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	FY 2010 Budget	FY 2011 Budget
Carry Forward	\$0	\$2,761,724	\$365,463	\$1,764,660	\$2,523,351	\$2,521,226	\$737,208				
New TRIF Revenue	\$4,837,623	\$4,803,518	\$5,251,866	\$6,976,943	\$5,800,000	\$5,811,155	\$5,107,913	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
TOTAL REVENUE	\$4,837,623	\$7,565,242	\$5,617,329	\$8,741,603	\$8,323,351	\$8,332,381	\$5,845,121	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
Personal Services	\$620,100	\$3,325,935	\$308,333	\$2,594,735	\$4,541,950	\$3,604,324	\$4,871,121	\$4,026,000	\$4,026,000	\$4,026,000	\$4,026,000
Operating	\$1,195,799	\$3,713,844	\$1,544,336	\$1,475,642	\$2,083,811	\$2,303,030	\$974,000	\$974,000	\$974,000	\$974,000	\$974,000
Capital	\$260,000	\$160,000	\$2,000,000	\$2,150,000	\$1,697,590	\$1,687,819					
TOTAL EXPENDITURES	\$2,075,899	\$7,199,779	\$3,852,669	\$6,220,377	\$8,323,351	\$7,595,173	\$5,845,121	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000

*To match HB 2661 General Adjustments given to state-funded employees, \$107,913 from the Venture Fund was allocated to this initiative for its personnel.

Funding of the Arizona Board of Regents’ Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

Launched with funds from a voter-approved tax in 2001, BIO5 fuels economic development and helps grow Arizona’s knowledge-based economy by:

- ◆ Conducting state-of-the-art biological research that can be translated into tangible human benefit;
- ◆ Facilitating interactions between researchers and industry to foster the development of biotechnology companies in Arizona; and

- ◆ Developing educational programs for undergraduate and graduate students, and K-12 teachers and students programs to develop a bioindustry workforce and enhance science literacy.

BIO5 research initiatives, identified by external reviewers as strengths at UA, have high potential for federal funding,

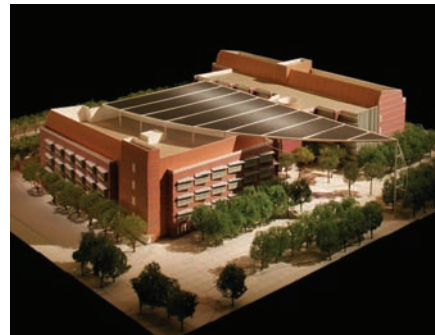
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GOALS

(Continued from page 3)

provide crucial technology platforms, and address problems of critical importance to Arizona and the nation.

BIO5 Partners include Arizona Cancer Center, Arizona Respiratory Center, Arizona Research Laboratories, eight UA colleges (medicine, pharmacy, agriculture and life sciences, engineering, public health, science, optical sciences, and business), the Translational Genomics Research Institute (TGen), and the Critical Path Institute (C-Path).



The Thomas W. Keating Bioresearch Building (left) and adjacent Medical Research Building, set a new standard in high-tech design. Dedication of the two buildings will take place on December 1, 2006.

MANAGEMENT

BIO5 Director, Dr. Vicki Chandler, reports to Dr. Leslie Tolbert, the Vice-President for Research, Graduate Studies and Economic Development. Reporting to Dr. Chandler are: Associate Director, Director for Business Development, Director of Marketing and Communications, Director for Workforce Development,

Operations Manager, and the five scientists who coordinate the five research initiatives.

Dr. Chandler and Dr. Tolbert are Regents Professors of The University of Arizona, and Dr. Chandler is a member of The National Academy of Sciences.

ADVISORY BOARDS

Two internal advisory committees provide guidance to BIO5:

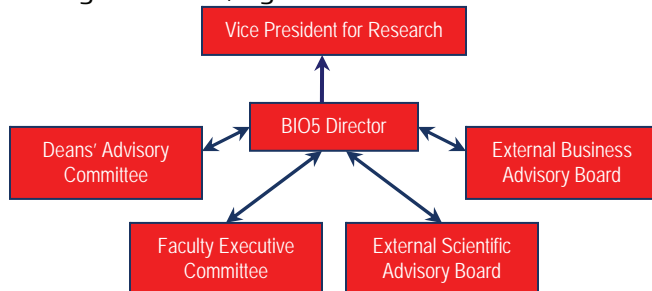
Executive Committee: Dr. Michael Cusanovich, Professor Biochemistry and Director, Arizona Research Laboratories; Dr. Fernando Martinez, Professor Pediatrics and Director, Arizona Respiratory Center; Dr. John McGrath, Professor Aerospace & Mechanical Engineering; and Dr. Roy Parker, Professor Molecular Cellular Biology.

Dean's Advisory Committee: Dr. Lyle Bootman, Pharmacy; Dr. Keith Joiner, Medicine; Dr. Tom Peterson, Engineering; Dr. Joaquin Ruiz, Science; and Dr. Eugene Sander, Agriculture and Life Sciences.

Two external boards provide oversight:

Business Advisory Board: Chair Thomas W. Keating, Loma Catalina Company; Vice-Chair Robert Morrison, Executive Director, Desert Angels; Robert Ashley, CEO, AmpliMed; Robert Barkley, CEO, Barkley Ag Enterprises; David Cohen, Managing Director, Technology Network International; Jack E. Davis, CEO, APS; Robert Davis, First Vice-President, CB Richard Ellis Tucson; Jack Dean, President of U.S. Science and Medical Affairs, Sanofi-Aventis Pharmaceuticals; Burt Ensley, CEO, Matrix Design; Bernd Fischer, Minister of Economics, Embassy Federal Republic of Germany; Stephen Goff, Senior Fellow, Syngenta Biotechnology; Lisa Haile, Partner, DLA Piper Rudnick Gray Cary US LLP; Joseph Jasinski, Program Director, IBM Health Care & Life Sciences; Lynn Kirkpatrick, CEO, Prolix Pharmaceuticals; Michael Murphy, Legal Counsel, Beaudry Motors; Kathleen Perkins, CEO, Breault Research; and James Randolph, Retired, Pacific Gas & Electric.

Scientific Advisory Board: This board will consist of five nationally and internationally renowned scientists, each with expertise in one of BIO5's target research initiatives.



LEARN MORE

- ◆ Contact Dr. Vicki Chandler, BIO5 Director, The University of Arizona, at chandler@ag.arizona.edu or 520-626-4272
- ◆ Contact Dr. Leslie Tolbert, Vice-President for Research, Graduate Studies and Economic Development, The University of Arizona, at tolbert@email.arizona.edu or 520-621-3513
- ◆ Visit the BIO5 website at www.bio5.org



TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

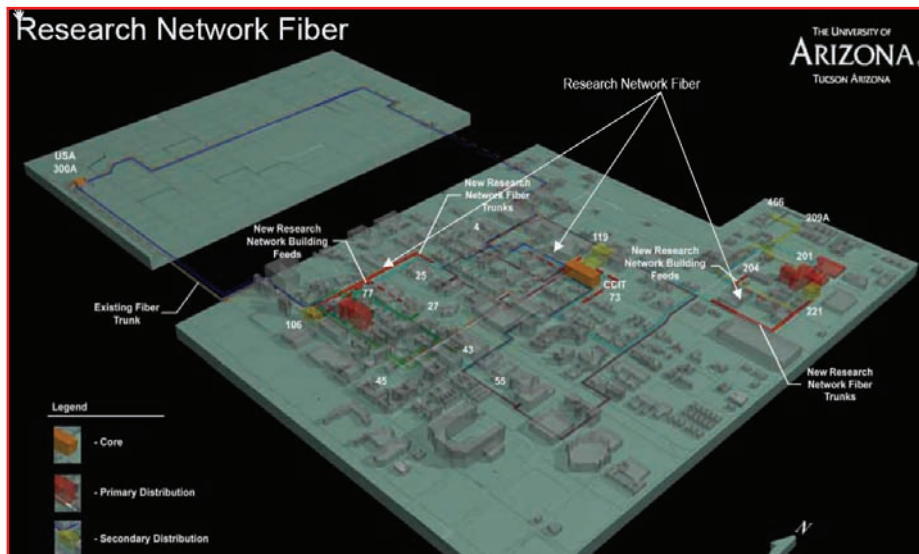
CRITICAL CORE INFRASTRUCTURE

THE UNIVERSITY OF ARIZONA.

Arizona's First University.

September 1, 2006

CRITICAL CORE INFRASTRUCTURE



Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	3
Management	4
Advisory Boards	4
Learn More	4

Building University research and education programs in selected high technology fields is a strategic investment for the state and the region. The University of Arizona is concentrating its research investments from the Technology and Research Initiative Fund in Biotechnology, Optics, and Water Sustainability. These and virtually all other high technology research fields depend on laboratory facilities and on advanced computing resources and high bandwidth connectivity.

While TRIF investments in infrastructure were made throughout the first five years, these investments were made one initiative at a time. Because infrastructure expenditures are better handled centrally, these have now been gathered into a separate initiative. Investments in research buildings, assuring appropriate laboratory space, occur as debt service. Investments in computing and communications infrastructure occur within the central computing organization, CCIT. The goal is to enable research, and by enabling research, to contribute to regional economic development.



*Dr. Sally Jackson
Vice President for Learning &
Information Technologies*

PERFORMANCE ANALYSIS

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Building networks brought to standard	1	1	1	1	1
Supercomputer usage	85-90%	85-90%	85-90%	85-90%	85-90%
Supercomputer users (PIs)	50	50	50	50	50
Grant expenditures by supercomputer users	\$18M	\$18M	\$18M	\$18M	\$18M
AZLIVE users (PIs)	12	13	14	15	16
Grant expenditures by AZLIVE users	\$1.2M	\$1.3M	\$1.4M	\$1.5M	\$1.6M
Percentile-ranked access to advanced networks	75 th or better	75 th or better	75 th or better	75 th or better	75 th or better

Notes on metrics:

- ◆ Network standards defined in the Network Master Plan and tri-University network architecture require 1 Gb to the building, inside wiring at Cat 5e or better, and redundant connections. TRIF funding is sufficient for 1 building per year.
- ◆ Supercomputer usage is as a percent of available computing capacity measured in “CPU Days.” High usage levels indicate good use of the resources, but usage close to 100% indicates insufficient capacity. Usage during last complete fiscal year was 87% and increasing.
- ◆ Number of supercomputer users and grant expenditures by supercomputer users are measures of the importance of the supercomputer to the overall research mission. Use is measured in terms of project leads (PIs) rather than individual accounts.
- ◆ Number of AZLIVE users and total grants supported are measures of the importance of AZLIVE to the overall research mission.
- ◆ Percentile-ranked access to advanced networks compares UA to other doctoral institutions. Our goal is to rise to and remain in the top quartile.



Route map for National Lambda Rail, an advanced research network. UA and ASU joined through CENIC, the regional network serving California, Nevada, and Arizona.

Although this is a new initiative, investments in Critical Core Infrastructure were made throughout fiscal years 2002 through 2006, funded through a proportional tax on the budgets of all other initiatives. These investments produced the following results:

- ◆ Completely renovated building network cabling and equipment for the Meinel Optical Sciences Building
- ◆ Elevated The University of Arizona’s Internet2 bandwidth from 155 Mbps to 1Gbps.
- ◆ Allowed The University of Arizona to join CENIC, a California based research and education network that provides access to National Lambda Rail
- ◆ Doubled the University’s supercomputing capability
- ◆ Brought immersive 3D visualization technology to campus as a shared resource

FINANCIAL INFORMATION

Revenue	FY 2007 \$5,230,200	FY 2008 \$5,464,621	FY 2009 \$5,711,935	FY 2010 \$5,972,852	FY 2011 \$6,248,118
Expenditures	FY 2007 Budget	FY 2008 Budget	FY 2009 Budget	FY 2010 Budget	FY 2011 Budget
Personnel	-	-	-	-	-
Operating	\$968,000	\$968,000	\$968,000	\$968,000	\$968,000
Capital	\$4,262,200	\$4,496,621	\$4,743,935	\$5,004,852	\$5,280,118
Totals	\$5,230,200	\$5,464,621	\$5,711,935	\$5,972,852	\$6,248,118

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

Note: This is a new initiative for FY 2007, and so we do not report any values for "FY 2006 Actual".

From FY 2007 through FY 2011, \$968,000 per year will be allocated among projects as follows:

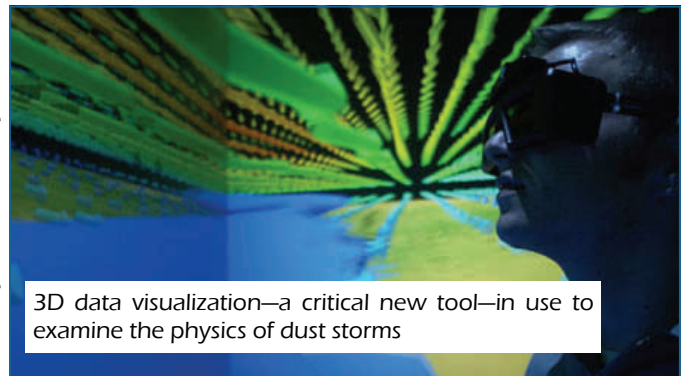
- ◆ \$268,000 per year in Operations for research building infrastructure improvements
- ◆ \$300,000 per year in Operations for advanced networking (CENIC, Internet 2)
- ◆ \$400,000 per year in Operations for high performance computing (supercomputer, visualization, etc.)

Over \$4M per year in Capital will be allocated to debt financing for new research-intensive buildings.

GOALS

The Critical Core Infrastructure initiative will:

- ◆ Continuously upgrade Internet connectivity to research buildings
- ◆ Provide access for researchers to high performance networks such as CENIC, Internet2, and National Lambda Rail
- ◆ Provide more, better supercomputing capability
- ◆ Introduce important new technologies that enable cutting edge research
- ◆ Develop new research space for TRIF activities



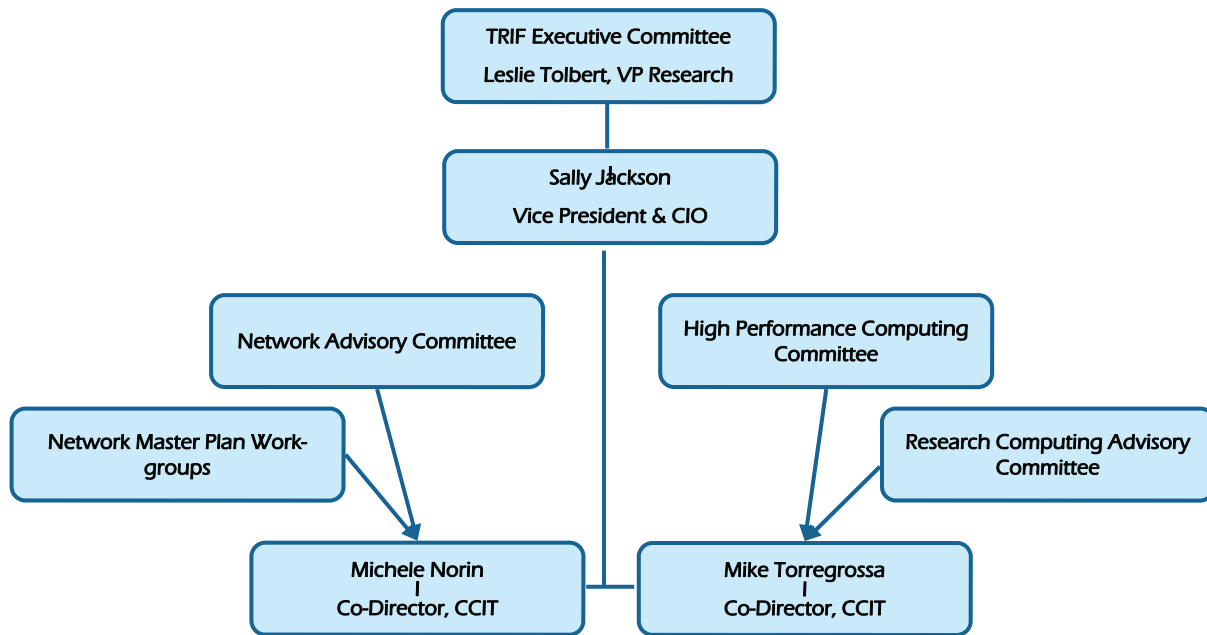
Panoramic view of AZ-LIVE, the environment used for immersive data visualization such as the dust storm project shown above. This new research facility serves not only advanced science and engineering, but also arts and humanities.

MANAGEMENT

All UA TRIF initiatives report to Dr. Leslie Tolbert, Vice President for Research, Graduate Studies, and Economic Development. Direct oversight of the computer infrastructure portion of this initiative is assigned to Dr. Sally Jackson, Vice President for Learning and Information Technologies and Chief Information Officer. Direct oversight for the capital investments will be by Dr. Tolbert and Dr. George Davis (Executive Vice President & Provost). Investment decisions are made by the UA TRIF Executive Committee: Dr. Tolbert (chair), Provost Davis, and all TRIF initiative leaders: Drs. Vicki Chandler (BIO5), Sally Jackson (Access), Pat Jones (Technology Transfer), Ron Marx (Workforce), Gene Sander (Water Sustainability), and Jim Wyant (Optics).

ADVISORY BOARDS

There is no external advisory board for the Critical Core Infrastructure investments, since these investments are all in service of initiatives that have their own advisory boards. All IT projects are managed within the Center for Computing and Information Technology, under the direction of Michele Norin for network projects and under the direction of Mike Torregrossa for computing projects, both Co-Directors of CCIT reporting to the CIO. Guidance on broad strategic decisions is provided by the TRIF Executive Committee and on more tactical decisions by the Campus IT Advisory Boards shown in the diagram below.



LEARN MORE

Contact Dr. Sally Jackson, Vice President for Learning & Information Technologies, at sjackson@u.arizona.edu or 520-626-7418, or visit <http://trif.arizona.edu/>.

Contact Dr. Leslie Tolbert, Vice President for Research, Graduate Studies, and Economic Development, The University of Arizona, at tolbert@email.arizona.edu or 520-621-3513



**TECHNOLOGY AND RESEARCH INITIATIVE FUND
(TRIF)**

OPTICAL SCIENCES AND TECHNOLOGY INITIATIVE



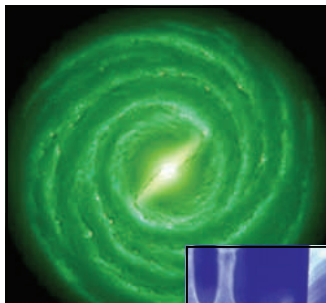
September 1, 2006

OPTICAL SCIENCES AND TECHNOLOGY INITIATIVE

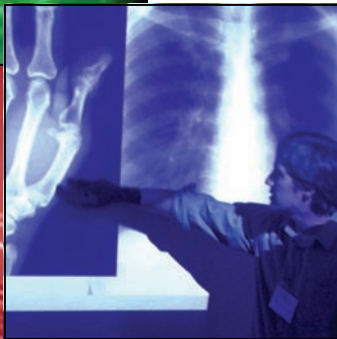
The University of Arizona College of Optical Sciences is home to the TRIF Optical Sciences and Technology Initiative. The initiative is multidisciplinary, with the College of Optical Sciences forming the core of the initiative. Through joint faculty appointments, cooperative research initiatives, and multidisciplinary outreach events, the optics college partners with the College of Science, the College of Engineering, and the College of Medicine to develop new technologies that will power the future of nearly every field of science and technology.

Contents

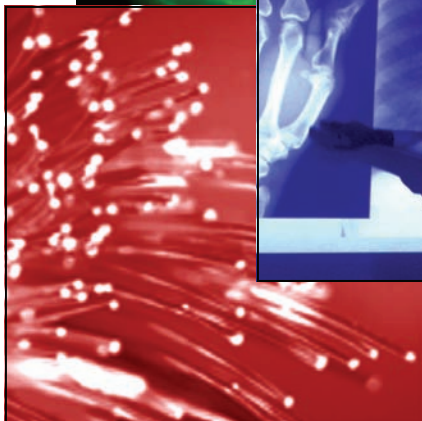
Introduction	1
Performance Analysis	2
Financial Information	3
Goals	3
Management	4
Advisory Boards	4
Learn More	4



The impact of optics on the economy of the State of Arizona and the country as a whole in the coming years is staggering. The market for optics in communication, medical care, heavy industry, sensing and security, and military exceeds \$200 billion per year.



The mission of the TRIF Optical Sciences and Technology Initiative is to further enhance the University's international preeminent optics program through the development of novel initiatives in optics education, research, workforce development, and industry outreach.



The optics initiative is multidisciplinary, with the College of Optical Sciences forming the core. The initiative targets three critical areas: photonics (red), imaging (blue), and astronomical optics (green).



*Dr. James C. Wyant,
Dean, College of Optical Sciences*

PERFORMANCE ANALYSIS

Performance Metrics (\$ in millions)	FY02 Proj	FY02 Actual	FY03 Proj	FY03 Actual	FY04 Proj	FY04 Actual	FY05 Proj	FY05 Actual	FY06 Proj	FY06 Actual	FY07 Proj	FY08 Proj	FY09 Proj	FY10 Proj	FY11 Proj
New federally funded major optics projects		2		2		11		2	1	5	2	3	3	4	4
New federally funded major optics projects (in \$s)		\$11.325		\$3.398		\$19.940		\$2.428	\$1.500	\$6.044	\$3.000	\$4.500	\$4.500	\$6.000	\$6.000
New industrial funded major optics projects									2	2	2	3	3	3	4
New industrial funded major optics projects (in \$s)									\$1.000	\$3.633	\$1.000	\$1.500	\$1.500	\$1.500	\$2.000
Optics major research proposals submitted									\$9.000	\$29.000	\$20.000	\$20.300	\$20.600	\$20.900	\$21.200
New faculty hired	4	3	4	6	2	0	2	1	2	1	2	2	2	2	2
New affiliate sponsors obtained		11		3		14		3	2	6	2	4	4	6	6
New affiliate sponsors obtained in dollars		\$0.096		\$0.019		\$0.110		\$0.019	\$0.017	\$0.080	\$0.017	\$0.034	\$0.034	\$0.051	\$0.051
Workforce Development															
Growth in optics-related undergraduate enrollment	10	12	15	25	15	44	0	25	0	-12	4	6	4	6	4
Growth in optics-related graduate enrollment	10	30	10	15	10	21	0	0	0	23	3	4	3	4	4
Growth in optics-related distance learning enrollment	5	3	10	48	10	32	10	32	5	23	5	8	8	10	10
Technology Transfer and Industry Outreach															
Number of optics-related start-up companies	2	2	1	1	0	0	0	0	1	1	0	1	0	1	1
Number of optics-related patent filings	2	2	2	6	2	3	2	2	2	1	2	2	4	4	5
Number of optics-related provisional patent filings		13		9		7		15	5	22	5	6	6	6	7
Industry Outreach Activities		4		4		5		4	4	5	4	4	4	4	4
Educational Outreach															
Public workshops, seminars and presentations		3		2		2		2	1	3	1	1	1	2	2
K-12 outreach presentations and summer camps		4		3		4		4	4	12	4	4	4	4	4
Website enhancements		2		4		2		2	2	2	2	2	2	2	2

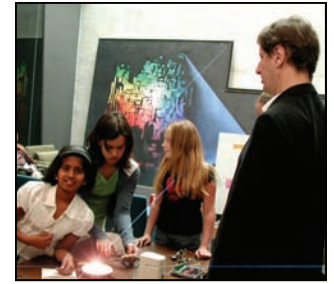
PERFORMANCE ANALYSIS

Research and Technology Development portion of the TRIF Optical Sciences and Technology Initiative focuses on development of novel photonic and imaging/sensor components along with state of the art astronomical optics through the use of seed funding and matching funds for projects that are designed for prototyping and/or proof of concept for early stage technologies. The number of externally funded research awards and technology transfer transactions are direct measures of this activity.

Workforce Development is a major objective of the TRIF Optical Sciences and Technology Initiative at the University of Arizona. The measures of the optics workforce development include the development of two-year degree programs at community colleges, expansion of undergraduate/ graduate and distance learning programs, fellowships to support graduate research projects, development of new courses for industrial training purposes, and outreach to K-12.

Technology Transfer and Industry Outreach is defined by collaborations with our optics industry partners in the development and commercialization of new technology, affiliate sponsorships, development of industry related training courses and distance learning program, and new start-up companies.

Educational Outreach is intended to introduce students to various career opportunities in Optics through visits to K-12 and community colleges with a special focus on under-represented populations, workshops and optics summer camps, and symposiums in imaging and photonics.



Optics professor Alan Kost hosts educational outreach programs to young women, Native Americans, Hispanics, and other historically underrepresented groups.

FINANCIAL INFORMATION

	FY 02 Actual	FY 03 Actual	FY 04 Actual	FY 05 Actual	FY 06 Budget	FY 06 Actual	Revised FY 07 Budget	FY 08 Budget	FY 09 Budget	FY 10 Budget	FY 11 Budget
REVENUE											
Carry Forward	\$ -	\$1,535,952	\$324,825	\$366,298	\$1,229,662	\$1,230,225	\$137,571				
TRIF Revenue	\$4,500,000	\$5,000,000	\$4,500,000	\$4,200,000	\$4,040,000	\$4,047,769	*\$3,296,492	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000
TOTAL REVENUE	\$4,395,646	\$6,339,470	\$4,846,348	\$4,858,145	\$5,269,662	\$5,277,994	\$3,434,063	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000
EXPENDITURES											
OPERATING BUDGET											
Personal Services	\$1,004,904	\$1,632,856	\$2,195,760	\$1,654,884	3,232,004	1,997,379	1,242,724	1,092,000	1,146,583	1,203,928	1,264,112
ERE	-	148,414	492,654	554,182	859,482	578,519	337,919	321,910	338,000	354,905	372,646
All Other Operating	854,790 854,790	3,233,375 3,233,375	791,636 791,636	418,854 418,854	59,862	1,564,525	1,853,420	1,786,090	1,715,417	1,641,167	1,563,242
TOTAL OPERATING BUDGET	1,859,694	5,014,645	3,480,050	2,627,920	4,151,348	4,140,423	3,434,063				
CAPITAL BUDGET											
Building Renovation											
Debt Service	1,000,000	1,000,000	1,000,000	1,000,000	1,118,314	1,000,000					
TOTAL CAPITAL BUDGET	1,000,000	1,000,000	1,000,000	1,000,000	1,118,314	1,000,000					
TOTAL EXPENDITURES	\$2,859,694	\$6,014,645	\$4,480,050	\$3,627,920	\$5,269,662	5,140,423	\$3,434,063	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000

*To match HB 2661 General Adjustments given to state-funded employees, \$96,492 from the Venture Fund was allocated to this initiative for its personnel.

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

The TRIF Optical Sciences and Technology Initiative will promote the field of optics by:

- The development of new technologies in Photonics, Imaging and Sensors and Astronomical Optics
- Working closely with our industry partners and the

University Office of Technology Transfer to identify research products that have potential for technology transfer

- Increasing the number of Optics related spin-off companies

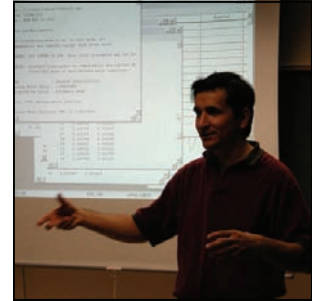
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GOALS

(Continued from page 3)

- Supporting workforce development through continued expansion of instructional and outreach programs in K-12 and community colleges, providing fellowships to support graduate student research in imaging and photonics, expansion of the undergraduate, graduate and distance learning Optics programs, development of new course curriculums to meet industry needs, and further

- expansion of the MBA/Masters in Optics program
- Developing a special focus on under-represented populations to introduce them to optics careers
- Increasing the number of world-class faculty in Optics and the number of major optics research projects



Professor Jose Sasian develops innovative course material for the Opti 517, Lens Design class.

MANAGEMENT

Dr. James C. Wyant, Chair of the TRIF Optics Committee, reports to Dr. Leslie Tolbert, the Vice-President for Research, Graduate Studies and Economic Development, for the TRIF Optics Initiative.

ADVISORY BOARDS

TRIF Optics Committee

James C. Wyant (Chair): Dean and Professor; Optical Sciences, Professor; Electrical & Computer Engineering.
Arthur F. Gmitro: Professor; Radiology and Optical Sciences.
Thomas Peterson: Dean; Engineering, Professor; Chemical & Environmental Engineering. **Nasser Peyghambarian**: Professor; Optical Sciences, Materials Science & Engineering, Chair; Lasers & Photonics. **Joaquin Ruiz**: Dean; Science, Professor; Geosciences.

External Review Committee

Bruce Wright (Chair): UA Associate Vice President; Economic Development. **Robert Breault**: CEO; Breault Research Organization. **Richard Juergens**: Engineering Manager; Raytheon. **Glenn Sincerbox**: Professor Emeritus; Optical Sciences.

TRIF Astronomical Optics Faculty Advisory Committee

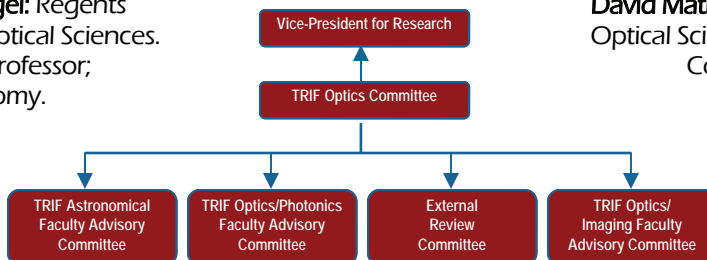
Peter Strittmatter (Chair): Department Head; Astronomy, Regents Professor; Astronomy, Director; Steward Observatory. **J. Roger P. Angel**: Regents Professor; Astronomy and Optical Sciences.
James H. Burge: Associate Professor; Optical Sciences and Astronomy.
Jose Sasian: Professor; Optical Sciences and Astronomy.

TRIF Optics/Imaging Faculty Advisory Committee

Arthur F. Gmitro (Chair): Professor; Radiology and Optical Sciences. **J. Roger P. Angel**: Regents Professor; Astronomy and Optical Sciences. **Jennifer K. Barton**: Associate Professor; Biomedical Engineering, Electrical & Computer Engineering, Optical Sciences. **Robert H. Brown**: Professor; Planetary Sciences. **Eustace L. Dereniak**: Professor; Optical Sciences. **Michael R. Descour**: Associate Professor; Optical Sciences. **James T. Schwiegerling**: Associate Professor; Ophthalmology and Optical Sciences.

TRIF Optics/Photonics Faculty Advisory Committee

Nasser Peyghambarian (Chair): Professor; Optical Sciences, Materials Science & Engineering, Chair; Lasers & Photonics.
Neal R. Armstrong: Professor; Chemistry and Optical Sciences. **Jerome V. Moloney**: Professor; Applied Mathematics and Optical Sciences. **Joseph Simmons**: Department Head and Professor; Materials Science & Engineering, Professor; Optical Sciences. **Masud Mansuripur**: Professor; Optical Sciences, Chair; Optical Data Storage Center.
David Mathine: Assistant Professor; Optical Sciences and Electrical & Computer Engineering.



LEARN MORE

- Contact James C. Wyant, Dean, College of Optical Sciences at jcwyant@optics.arizona.edu or 520-621-2448
- Contact Dr. Leslie Tolbert, Vice-President for Research, Graduate Studies and Economic Development, at tolbert@u.arizona.edu or 520-621-3513.
- 62 • Visit the College of Optical Sciences Website at www.optics.arizona.edu



**TECHNOLOGY AND RESEARCH INITIATIVE FUND
(TRIF)**

TECHNOLOGY TRANSFER INFRASTRUCTURE

THE UNIVERSITY OF ARIZONA.

Arizona's First University.

September 1, 2006



Technology transfer's emergence with entrepreneurship as one of the organizing principles of activity within universities coincides with the growth in importance of knowledge-based industries to the health of local and state economies. The technology transfer infrastructure plan is building the necessary infrastructure to move research activity from the laboratory to the marketplace, supporting UA's goal to be a driver of Arizona's knowledge-based economy.



dMetrix, a UA startup, is a Tucson-based developer of digital pathology instruments

By integrating technology transfer into university activities, it enhances Arizona's knowledge-based workforce development and the creation of new knowledge-based industries.

The technology transfer infrastructure plan supports the creation of a thought-leading, nationally-recognized technology transfer program bringing UA innovations into broad public and commercial use. This infrastructure initiative supports the collaborative environment

for research within UA exemplified by the TRIF Research Programs. Working together with those programs, the plan integrates their translational efforts with economic development and market activities driven by UA's Office of Economic Development (OED) and Office of Technology Transfer (OTT).

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	3
Management	4
Advisory Boards	4
Learn More	4



*Dr. Patrick Jones,
Director Technology Transfer*



*Bruce A. Wright
Associate Vice President
For Economic Development*

PERFORMANCE ANALYSIS

	FY 02		FY 03		FY 04		FY 05		FY 06		FY 07		FY 08		FY 09		FY 10		FY 11	
	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Act	Proj	Act
Contributions to Revenue																				
Gross Royalty Revenues	\$575,515	\$714,415	\$720,645	\$1,076,870	\$900,804	\$1,008,621	\$1,126,007	\$1,175,915	\$1,407,509	\$1,688,857	\$1,520,000	\$1,670,000	\$1,820,000	\$1,970,000	\$2,110,000					
License-Based Cost Recovery	N/P	\$68,968	N/P	\$277,401	N/P	\$32,075	\$325,000	\$280,486	\$357,500	\$423,302	\$393,250	\$432,575	\$475,833	\$523,416	\$575,757					
Sponsored Research Contracts	N/P	N/A	N/P	\$615,527	N/P	\$847,175	\$600,000	\$610,000	\$600,000	\$768,900	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000					
Direct Grant Support OTT&OED	N/P	\$50,000	N/P	\$30,000	N/P	\$50,000	N/P	\$30,000	\$150,000	\$202,817	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000					
Total Revenues		\$813,383		\$1,999,798		\$2,217,871		\$2,096,401	\$2,515,009	\$3,083,876	\$2,713,250	\$2,902,575	\$3,095,833	\$3,293,416	\$3,485,757					
Total TRIF Expenditures		\$367,735		\$577,644		\$558,834		\$762,795		\$1,086,949	\$826,810	\$800,000	\$800,000	\$800,000	\$800,000					
Economic Development																				
Total Startup Companies	3	5	4	1	5	4	6	5	8	3	8	8	9	9	9					
AZ-based Startups	N/P	5	N/P	0	N/P	3	N/P	4	4	3	6	6	7	7	7					
UA Tech Licensed to AZ Companies	N/P	6	N/P	14	N/P	5	N/P	18	N/P	11	N/P	N/P	N/P	N/P	N/P					
TTIP Plan Metrics																				
Licenses & Options Executed	N/P	18	N/P	24	N/P	25	30	32	35	26	38	40	43	45	45					
Major Agreements Executed	N/P	25	N/P	27	N/P	39	N/P	47	N/P	42	58	60	63	65	68					
Patent Applications Filed	57	62	69	77	83	91	100	106	105	109	105	110	115	120	125					
U.S. Patents Issued	9	8	10	12	15	18	18	10	20	13	20	23	26	29	32					
Disclosures Received	128	109	154	111	185	95	125	102	125	88	135	150	165	180	195					
% Disclosures Licensed	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P	50%	55%	60%	65%	70%					
Strategic Partnerships	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1					
Economic Analysis																				
OED Reports	0	0	1	0	0	1	1	1	1	0	1	1	1	1	1					
Workforce Development																				
Student Interns	1	1	1	1	2	2	2	2	3	5	4	4	5	5	6					
Specialized Programs Or Workshops	0	0	0	0	1	1	1	1	2	2	2	2	2	2	2					
Courses Offered	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1					

PERFORMANCE ANALYSIS

• Contributions to Revenue are the number of dollars accrued through licenses, options, sponsored research support to university researchers through OTT agreements and direct grant dollars to OTT and OED in support of their programs. The measures listed above are estimated based on our performance through FY 2006.

• Economic development measures are based upon start-ups licensing UA technology that is fundamental to their formation, the number of those start-ups choosing to



In 1989, Evan Hersh, M.D., of the Arizona Cancer Center, founded a new company, Amplimed. Years later he and his colleagues rediscovered a drug that showed great promise in stimulating the body's immune response. Now the drug, called Amplimexon, has been approved for Phase I clinical trials for patients with multiple myeloma, malignant melanoma and pancreatic cancer.

operate in Arizona, as well as, the number of UA Technologies licensed by existing companies in Arizona.

• TTIP plan metrics include a variety of metrics that capture operational scope, efficiency and relevance of OTT. This includes agreements

executed, patents and patent applications, and disclosures received. For some of the measures provided here no projections (N/P) were made in the original planning or metrics for the renewal are changing to better reflect the proposed activities.

"The Office of Economic Development provides critical data and analysis for assessing the impact of TRIF dollars."

• Economic analysis by OED is designed to measure the effectiveness of the University's TRIF initiatives as well as their economic impact on Arizona's economy and its industry clusters.

• Workforce contributions occur in a variety of ways, however for purposes of this initiative we count only those who intern in either OED or OTT, or take part in educational efforts directly created and supported by OTT and OED.

FINANCIAL INFORMATION

	FY 2002 Act	FY 2003 Act	FY 2004 Act	FY 2005 Act	FY 2006 Proj	FY 2006 Act	Revised FY 2007 Proj	FY 2008 Proj	FY 2009 Proj	FY 2010 Proj	FY 2011 Proj
Carryforward	\$ 0	\$ 117,080	\$ 115,858	\$ 260,372	\$ 300,048	\$ 301,469	\$ 176,366	\$ 0	\$ 0	\$ 0	\$ 0
New TRIF Funding	484,815	576,422	703,348	803,892	960,000	961,846	826,810	800,000	800,000	800,000	800,000
Total TRIF Funding	484,815	693,502	819,206	1,064,264	1,260,048	1,263,315	1,003,176	800,000	800,000	800,000	800,000
Personnel OTT	\$ 72,731	\$ 219,485	\$ 198,453	\$ 267,930	\$ 396,431	\$ 354,832	\$ 338,379	\$ 273,240	\$ 273,240	\$ 273,240	\$ 273,240
Operating OTT	33,800	68,696	34,638	38,155	56,000	98,634	38,607	56,000	56,000	56,000	56,000
Patenting OTT	207,918	15,437	18,503	98,483	173,367	125,553	196,150	149,660	149,660	149,660	149,660
Expenditures OTT	314,449	303,618	251,594	404,568	625,798	579,019	573,136	478,900	478,900	478,900	478,900
Personnel OED	\$ 10,220	\$ 114,394	\$ 170,953	\$ 208,038	\$ 360,567	\$ 205,138	\$ 378,231	\$ 237,600	\$ 237,600	\$ 237,600	\$ 237,600
Operating OED	43,066	159,632	136,287	150,189	113,683	183,992	10,609	83,500	83,500	83,500	83,500
Expenditures OED	53,286	274,026	307,240	358,227	474,250	389,130	388,840	321,100	321,100	321,100	321,100
Capital Expenditure					\$ 160,000	\$ 118,800	\$ 41,200				
Total TRIF Expenditure	367,735	577,644	558,834	762,795	1,260,048	1,086,949	1,003,176	800,000	800,000	800,000	800,000

*To match HB 2661 General Adjustments given to state-funded employees, \$26,810 from the Venture Fund was allocated to this initiative for its personnel.

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

The Technology Transfer Infrastructure Plan goals are to:

- ◆ enhance the technology transfer infrastructure
- ◆ increase significantly the level and breadth of technology transfer from the university
- ◆ increase engagement in technology transfer by the faculty, staff and students

- ◆ assist efforts to commercialize university technology
- ◆ connect these efforts into both State and local community economic development efforts

Building upon the success of the first phase of TRIF support, the second phase of funding will solidify the creation of a scalable infrastructure for technology

(Continued on page 4)

GOALS

(Continued from page 3)

transfer, support the implementation of value-added partnerships with other TRIF initiatives and further link activities in technology transfer within UA and in the community, especially through Arizona’s economic clusters.

About the Technology Transfer Infrastructure Plan: The Technology Transfer Infrastructure Plan is a two-part initiative under the TRIF program to continue to enhance the University of Arizona’s infrastructure for technology transfer and enhancing associated economic

MANAGEMENT

Bruce Wright, Associate Vice President for Economic Development, and Patrick Jones, Director of Technology Transfer, report to Dr. Leslie Tolbert, Vice President for Research, Graduate Studies and Economic Development. Reporting to Mr. Wright are the Directors

development in Arizona. The Technology Transfer Infrastructure Plan provides support for both the UA Office of Technology Transfer and the UA Office of Economic



More than 20 years of research by UA Pharmacy Professors Elaine and Myron Jacobson have produced an innovative product to treat sun damaged skin. "The UA fosters great research that leads to innovative technologies," Dr. Jacobson says. "And researchers here are encouraged to take the next step to turn discoveries into products that help people and boost the local economy."

of the Office of Economic Development, the Office of Economic and Policy Analysis, the UA Science and Technology Park, and the Arizona Center for Innovation. Reporting to Dr. Jones are the Internal Patent Counsel, Manager of Outreach, and a group of four licensing professionals.

ADVISORY BOARDS

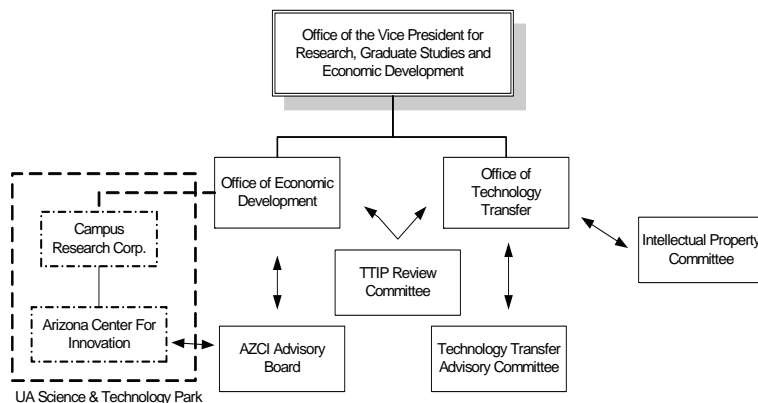
TTIP Review Committee: Mr. Larry Aldrich, General Partner, Valley Ventures • Dr. Gary Libecap, Professor of Economics and Entrepreneurship, University of California—Santa Barbara • Dr. Colin Kaltentbach, Professor and Director of Extension, College of Agriculture and Life Sciences

Technology Transfer Advisory Committee: Robert Hagen, Chair, Southern Arizona Tech Council • Prabhu Dayal, EUEC and Chair, Environmental Cluster • Robert Breault, CEO, Breault Research • Bruce Wright, AVP for Economic Development, University of Arizona • Nick Soloway, Partner, Hayes Soloway, LLP • Nancy Russell, Dean of Business

Programs, Pima Community College • and other members of the economic clusters of Southern Arizona.

Arizona Center for Innovation Advisory Board: Larry Aldrich, General Partner, Valley Ventures • Kendall Burt, City of Tucson • Eugene Cochran, RCT • Mike DeConcini, Sr. VP, Unisource Energy • Steven Fell, President, Bank One • Robert Fortuno, Esq. • Harry George, Solstice Capital • and other community members

Intellectual Property Committee: An internal board of faculty from Engineering, Science and Medicine providing policy oversight of OTT appointed by the OVP and the Faculty Senate.



LEARN MORE

- ◆ Contact Dr. Patrick Jones, Director, Office of Technology Transfer, at pljones@ott.arizona.edu or 520-621-5000.
- ◆ Contact Mr. Bruce Wright, Associate Vice President for Economic Development, The University of Arizona, wrightb@u.arizona.edu or 520-621-4088.
- ◆ Contact Dr. Leslie Tolbert, Vice-President for Research, Graduate Studies and Economic Development, The University of Arizona, at tolbert@email.arizona.edu or 520-621-3513.
- ◆ Visit the OTT or OED websites at www.ott.arizona.edu or www.oed.arizona.edu



**TECHNOLOGY AND RESEARCH INITIATIVE FUND
(TRIF)**

VENTURE FUND

THE UNIVERSITY OF ARIZONA.

Arizona's First University.

September 1, 2006

The Venture Fund becomes the seventh initiative in our work with TRIF funding due to our elimination of the Arizona Center for Information Systems and Technology (ACIST) Initiative. While other initiatives have defined projects, these funds will be distributed annually on a competitive basis for new projects that relate to existing TRIF initiatives.

GOALS

The goals of Venture Fund will be to:

- ◆ support new exciting projects outside the current scope of, but complementing, existing initiatives
- ◆ build creatively on work completed in the first five-year phase of TRIF initiatives (FY02—FY06)
- ◆ open new avenues to interdisciplinary research that cross initiative boundaries.

Contents

Introduction	1
Goals	1
FY07 Projects	2
Financial Information	2
Learn More	2



*George H. Davis
Executive Vice President for
Academic Affairs and Provost*



*Leslie P. Tolbert
Vice President for Research,
Graduate Studies, and Economic
Development*

FY 07 PROJECTS

- Phasing out commitments to ACIST-supported faculty in FY07; Budget – \$1,129,410
- Biodiversity Informatics Project – this work, building in part on ACIST accomplishments, will form a framework to solve key problems of integrating complex data sets that support biological research and medical care; Budget – \$636,150
- McKnight Brain Institute – new optical imaging equipment will allow researchers to develop new methods for studying the neural basis for cognitive changes that occur during aging; Budget – \$350,500
- Arizona Center for Mathematics and Education – this center will lead the nation in mobilizing high-level collaborations among mathematicians, scientists, and educators; Budget – \$50,000

FINANCIAL INFORMATION

	FY2007 Budget	FY2008 Budget	FY2009 Budget	FY2010 Budget	FY2011 Budget
Carry forward	\$437,857	\$0	\$0	\$0	\$0
New TRIF Revenue	*\$1,750,729	\$3018,484	\$4,007,741	\$5,051,406	\$6,152,474
Total Revenue	\$2,188,586	\$3,018,484	\$4,007,741	\$5,051,506	\$6,152,474
Actual Revenue	\$2,188,586	\$3,018,484	\$4,007,741	\$5,051,406	\$6,152,474
Personal Services	\$1,678,493	\$2,286,731	\$3,036,168	\$3,826,823	\$4,660,966
ERE	\$510,093	\$731,753	\$971,573	\$1,224,583	\$1,491,508
Operations					
Debt Service					
Capital					
Total Expenditures	\$2,188,586	\$3,018,484	\$4,007,741	\$5,051,406	\$6,152,474

*To match HB 2661 General Adjustments given to state-funded employees, funds were allocated to each of the existing six initiatives from Venture Fund revenue (\$2,080,800 – \$330,071) in FY 2007. The commitment is ongoing through FY 2011.

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

LEARN MORE

Contact Dr. Leslie P. Tolbert, Vice President for Research, Graduate Studies, and Economic Development, at tolbert@email.arizona.edu or 520-621-3513.



**TECHNOLOGY AND RESEARCH INITIATIVE FUND
(TRIF)**

WATER SUSTAINABILITY

THE UNIVERSITY OF ARIZONA.

Arizona's First University.

September 1, 2006



A sustainable, high-quality water supply is essential for economic development and enhanced quality of life in Arizona. Competing demands for water due to unprecedented population growth, emerging contaminants, high-tech industry needs, ecological concerns about habitat



WSP supports research to determine water resources in the Verde Valley.

Photo Credit: James Hogan

and species conservation, drought, and the uncertainties of climate change all contribute to the growing need for improved water science, new technologies, and the tools and policies for real-world application.

The Water Sustainability Program (WSP) is creating a collaborative environment to leverage the UA's recognized excellence in water expertise to enhance water research, education and outreach that will produce

exportable knowledge and techniques that benefit Arizona and have global application. The focus of WSP is to enhance opportunities for students, build new education and research programs, and partner with industry to stimulate economic development.

WSP's vision is to be a world leader in interdisciplinary, cutting-edge water resources research and in applying results to resolve water resource challenges at the state, national, and international level.



WSP products: arizonawater.org site, research bulletin, rainlog.org site, water quality booklet.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	3
Management	4
Advisory Boards	4
Learn More	4



Dr. Eugene Sander
WSP Director

PERFORMANCE ANALYSIS

Performance Measures	FY02 Proj	FY02 Act	FY03 Proj	FY03 Act	FY04 Proj	FY04 Act	FY05 Proj	FY05 Act	FY06 Proj	FY06 Act	FY07 Proj	FY08 Proj	FY09 Proj	FY10 Proj	FY11 Proj
Return on Investment															
Government grants obtained/retained				\$244,700	\$275,000	\$450,000	\$500,000	\$260,000	\$500,000	\$258,200	\$2.5M	\$2.6M	\$2.7M	\$2.8M	\$2.9M
Additional funding obtained	\$400,000	\$400,000		\$88,000	\$75,000	\$350,000	\$250,000	\$180,000	\$250,000	\$155,500	\$1.2M	\$1.3M	\$1.4M	\$1.5M	\$1.6M
Water Center Leveraged Funds ¹		\$1.5M		\$1.5M		\$1.7M		\$3.0M	\$3.5M	\$3.0M					
New faculty hired	1	1			1	1	1	1	5	4	9	2	2	2	2
Technology Transfer & Industry Collaborations															
Number of patent applications in process							3	4	4	4	3	3	4	4	5
Number of workshops/seminars on tech transfer ²											6	7	8	9	9
Number of new collaborations					72	75	30	36	36	36					
Number of industry collaborators											100	110	120	130	140
Workforce Contributions															
Number of undergraduate employment/research opportunities	0	0	2	9	22	22	22	40	45	40	42	42	42	45	45
Number of graduate employment/research opportunities	1	1	4	16	37	54	50	75	85	89	85	85	85	88	88
Number of post graduate employment/research opportunities	2	2	1	2	2	3	3	3	4	3	4	4	4	4	4
Curriculum Innovations/Education															
Number of facilitators trained				40	40	40	40	41	41	58	40	45	50	55	60
Number of teachers trained				475	735	735	700	790	905	905	780	800	820	840	860
Number of K-12 students benefiting from training				26,500	26,340	26,340	26,000	29,230	29,000	33,480	25,000	26,000	27,000	28,000	29,000
Number of Water festivals held/# schools/students					2/18/1700	5/27/2300	6/33/2920	6/56/4750	7/67/4790						
Interdisciplinary curriculum modules developed				7	5	5	3	1							
Number of teachers trained/student contacts on modules				9/390	20/800	105/1490	200/1500	201/2595	200/1500	34/1000					
Number of teachers involved in outreach activities											130	134	138	140	150
Number of K-12 students participating in outreach activities											4,500	4,600	4,700	4,800	4,900
Number of new activities developed for K-12 outreach											1	2	2	2	2
Number of communities participating in outreach activities											6	7	8	9	10
Number of new water related courses/certificates/degrees											1	1	1	1	1
Other Knowledge Transfer															
Number of water conferences/national meetings supported	1	1	1	1	1	1	1	1	1	2	2	3	3	4	4
Number of new rural water centers	2	2	2	2	2	0	2	0	2	0					
Number of communities assisted in water management											5	8	10	12	14
Number of publications produced											2	2	3	3	4
Number of other knowledge transfer products											2	2	2	2	2
Number of presentations											50	50	50	50	50

¹ Water Center leveraged funds refers to external funding to the four coordinating Water Centers that was a match to TRIF funded activities, in the second Business Plan this component is folded into the first 2 ROI metrics.

² Metrics in blue text are new or revised measures devised for the second Business Plan to reflect program growth and change.

PERFORMANCE ANALYSIS

- WSP completed a very productive year. Over 35 projects addressing Arizona specific water issues that included development of new water technologies, products, services and information were supported. These projects provided research opportunities for 129 students and resulted in 36 new external partnerships. Twenty new projects were selected through a competitive review process and 9 new Fellowship students were chosen to receive awards in FY07. • Four new faculty hires strengthened expertise in hydrology and law, and recruitment of 9 new world class faculty in atmospheric science, chemical & environmental engineering, political science, natural resources, geography, water quality and environmental and community health disciplines will bring a wealth of new water expertise and research dollars to campus in FY07. As part of the recruitment and research initiative, WSP will be providing seed money to develop proposals for 2 new centers; a World Health Organization Collaborative Center in Water and an international Hydrological Synthesis Center. Start-up for 3 state-of-the-art infrastructure projects in FY07 to enhance the ability of UA to compete for major federal grants was also supported.
- The WSP Executive Committee members coordinated multiple

directed initiatives through their respective centers that serve as hubs to strengthen and expand cross-disciplinary efforts in water management, policy, supply and quality. • Education and outreach funds supported delivery of water education programs to over 1,000 teachers and more than 33,000 K-12 students in a number of different venues, aligned with state science and math curriculum requirements. Water education for legislators was promoted through a Water Expo event at the capitol. The first in a series of WSP workshops was successfully launched to expand tech transfer to the water industry. Arsenic was the first topic, one of particular concern to rural Arizona. WSP research, products and services were showcased through a Water Forum and poster session. This year's event will focus on new tools and technology for water sustainability that have been developed through TRIF. Web site improvements, new reports and publications, and outreach through the Cooperative Extension statewide network will continue to enhance accessibility to WSP accomplishments. • Actual performance measures in FY06 were close to projected figures. External funding from both public and private sources was less than expected.

FINANCIAL INFORMATION

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY2006	Revised FY2007	FY 2008	FY 2009	FY 2010	FY 2011
	Actual	Actual	Actual	Actual	Budget	Actual	Budget	Budget	Budget	Budget	Budget
Carry Forward	\$0	\$442,080	\$95,320	\$437,798	\$594,514	\$595,950	\$690,226				
New TRIF Revenue	\$474,283	\$480,352	\$2,009,566	\$2,460,948	\$3,900,000	\$3,907,500	*\$3,254,645	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000
TOTAL REVENUE	\$474,283	\$922,432	\$2,104,886	\$2,898,746	\$4,494,514	\$4,503,450	\$3,944,871	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000
Personal Services	\$28,757	\$502,244	\$1,135,364	\$1,585,695	\$2,989,533	\$1,924,105	\$3,197,142	\$2,745,000	\$2,745,000	\$2,745,000	\$2,745,000
Operating	\$3,446	\$324,868	\$531,724	\$717,101	\$652,571	\$1,329,438	\$455,000	\$455,000	\$455,000	\$455,000	\$455,000
Capital					\$852,410	\$559,681	\$292,729				
TOTAL EXPENDITURES	\$32,203	\$827,112	\$1,667,088	\$2,302,796	\$4,494,514	\$3,813,224	\$3,944,871	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000

* To match HB 2661 General Adjustments given to state-funded employees, \$54,645 from the Venture Fund was allocated to this initiative for its personnel.

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

WSP's goal is to strengthen research, education, and outreach efforts in the water resources area at the University of Arizona to help ensure a sustainable, high-quality water supply for economic development and enhanced quality of life for all of Arizona. WSP will accomplish this goal by working to:

- ◆ Produce a high quality work force
- ◆ Develop and evaluate new water technologies

- ◆ Provide direction for the development of sound water policy

WSP is leveraging its strengths in academia, research, and environmental technology industries to create several outcomes that include: (a) practical education for grades K-12 to create general awareness of issues, problems, and career-related training; (b) internationally

(Continued on page 4)

GOALS

(Continued from page 3)



Water Quality Center technician analyzing water samples

recognized research and technology transfer initiatives; (c) a thriving industry cluster, which includes both private sector and public sector entities, supported by a skilled workforce that is educated at the University of Arizona; and (d) stronger relationships across disciplines within the University of Arizona, which

will result in research innovations to create new business initiatives. These efforts build on the extensive expertise among over 300 UA faculty and staff in 10 colleges and 60 departments and help to promote UA as a national

and global leader in research, technology development, and economic development.

WSP will continue to pursue these goals and address water quality, supply and policy issues in Arizona through a recruitment and research initiative; a competitive grants program; a Student Fellowship program; directed interdisciplinary initiatives; education and outreach programs; and the activities of the four founding water centers.



WSP Executive Committee L-R: Farhang Shadman, Ian Pepper, Sharon Megdal, and Jim Shuttleworth

MANAGEMENT

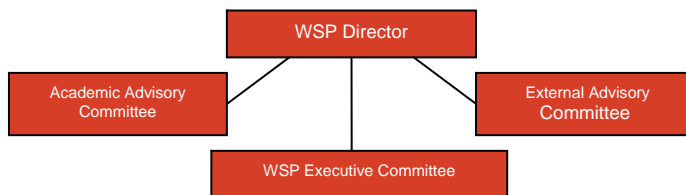
WSP Director, Vice-Provost and Dean of the College of Agriculture and Life Sciences, Eugene Sander, reports to Leslie Tolbert, Vice-President for Research, Graduate Studies and Economic Development. Reporting to the Director is the WSP Executive Committee, comprised of the directors of the four coordinating water centers: Sharon Megdal, Water Resources Research Center; Ian Pepper, NSF Water Quality Center; Farhang Shadman, NSF Engineering Research Center for Environmentally Benign Semiconductor Manufacturing; and Jim Shuttleworth, NSF Center for Sustainability of semi-Arid Hydrology and Riparian Areas.

ADVISORY BOARDS

Two advisory committees provide guidance:

Academic Advisory Committee: Dean Eugene Sander, Agriculture and Life Sciences, Chair • Assoc Dean Beth Mitchneck, Social and Behavioral Science • Dean Toni Massaro, Law • Dean Tom Peterson, Engineering • Dean Joaquin Ruiz, Science • Dean Marie Swanson, Public Health.

External Advisory Committee: Amy Belger, Environmental Health and Safety Manager, Freescale Semiconductor • Thomas Buschatzke, Water Advisor, City of Phoenix • Joan Card, Water Quality Division Director, Arizona Department of Environmental Quality • Prabhu Dayal, CEO, C Trade, Chair, Environmental Technology Industry Cluster • Vladimir Drobny, Development Manager, Texas



Instruments • Carol Erwin, Area Manager, Bureau of Reclamation • Jim Holway, Assoc Director, Global Institute for Sustainability, ASU • Nick Melcher, Director, Arizona Water Science Center, USGS • David Modeer, Director, Tucson Water • Errol Montgomery, President, Errol L. Montgomery & Associates • Karen Smith, Deputy Director, Arizona Department of Water Resources • John Sullivan, Associate General Manager, Salt River Project • Dick Walden, Chairman, Farmers Investment Company • Sid Wilson Jr., General Manager, Central Arizona Project.

LEARN MORE

- ◆ Contact Dr. Eugene Sander, WSP Director, at egsander@cals.arizona.edu or 520-621-7621.
- ◆ Contact Dr. Leslie Tolbert, Vice-President for Research, Graduate Studies and Economic Development, at tolbert@email.arizona.edu or 520-621-3513.
- ◆ Visit the WSP website at www.uawater.arizona.edu for program details and visit the WSP ArizonaWater.org website, your first stop for state water information.



TECHNOLOGY AND RESEARCH INITIATIVE FUND
(TRIF)

Workforce Initiative The Educator Development Plan

THE UNIVERSITY OF ARIZONA.

Arizona's First University.

WORK FORCE INITIATIVE The Educator Development Plan

September 1, 2006

Without continued workforce development programs, the economic development of Arizona will depend primarily on out-of-state resources.



Arizona's children must receive quality instruction in math and science

The Workforce Initiative: The Educator Development Plan addresses critical workforce shortages in Arizona for math, science, and agricultural science educators through recruiting, preparing, and retaining teachers. This interdisciplinary initiative is a collaboration among faculty in the Colleges of Education, Science, and Agriculture and Life Sciences.

To support a technologically advanced economy in Arizona, Arizona's children must receive quality instruction in math and science. One of the most



critical elements of student success in school is quality teaching. These teachers motivate and prepare students to pursue careers in math, science, and agricultural science, which ultimately increases economic development potential.

Contents

Introduction	1
Performance Analysis	2
Financial Information	3
Goals	3
Management	4
Advisory Board	4
Learn More	4



Dr. Ronald W. Marx

PERFORMANCE ANALYSIS

METRICS	FY 02 Actual	FY 03 Actual	FY 04 Actual	FY 05 Actual	FY 06 Actual	FY 07 Proj	FY 08 Proj	FY 09 Proj	FY 10 Proj	FY 11 Proj
<u>Teachers Certified</u>										
Secondary Math & Science	7	12	22	20	24	40	40	45	45	45
Master’s Level Secondary Math & Science	28	25	26	40	24	30	30	30	30	30
Agriculture	8	13	16	16	12	15	17	19	20	20
<u>K-12 Students Impacted**</u>										
	2,150	2,500	3,200	3,800	3,000	4,250	8,600	13,300	18,050	22,000

* Based on federal grants received during Phase I and estimates of grant applications during Phase II

** Assumes 50 students per certified teacher

- The Educator Development Plan will prepare teachers for mathematics, sciences, and agriculture science certification for K-12 schools. These teachers will be employed in schools throughout Arizona. We exceeded our targets for producing certified teachers in our first 5 years and have built the infrastructure to sustain this program in the next phase. Thus the estimates of numb of teacher produced increase only very modestly.
- The graduates of the teacher preparation programs funded by this project will impact K-12 students directly. We estimate each teacher will impact 50 students annually. This is a conservative estimate—some teachers will have more students, other will have less or will leave teaching. Our estimates are cumulative, because most teachers will stay in teaching, thus each year we add more teachers and impact increasingly more students.

FINANCIAL INFORMATION

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2006	Revised FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	ACTUAL	ACTUAL	ACTUAL	ACTUAL	BUDGET	ACTUAL	BUDGET	BUDGET	BUDGET	BUDGET	BUDGET
REVENUE											
Carry Forward	\$ -	\$138,457	\$261,542	\$189,172	\$129,267	\$128,370	\$228,680	\$ -	\$ -	\$ -	\$ -
TRIF Revenue	\$775,705	\$769,523	\$803,831	\$801,574	\$960,000	\$961,846	*\$813,817	\$800,000	\$800,000	\$800,000	\$800,000
TOTAL REVENUE	\$775,705	\$907,980	\$1,065,373	\$990,746	\$1,089,267	\$1,090,216	\$1,042,497	\$800,000	\$800,000	\$800,000	\$800,000
EXPENDITURES											
OPERATING BUDGET											
Personal Services	\$275,689	\$273,316	\$394,516	\$393,949	\$477,667	\$325,954	\$599,535	\$405,802	\$405,802	\$405,802	\$405,802
ERE	\$48,319	\$45,599	\$78,951	\$93,405	\$119,778	\$81,126	\$178,662	\$129,857	\$129,857	\$129,857	\$129,857
Operating Capital	\$313,240	\$327,523	\$402,734	\$375,022	\$331,822	\$335,656	\$264,300	\$264,341	\$264,341	\$264,341	\$264,341
					\$160,000	\$118,800					
EXPENDITURES GRAND TOTAL	\$637,248	\$646,438	\$876,201	\$862,376	\$1,089,267	\$861,536	\$1,042,497	\$800,000	\$800,000	\$800,000	\$800,000

*To match HB 2661 General Adjustments given to state-funded employees, \$13,817 from the Venture Fund was allocated to this initiative for its personnel..

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a 0.6 percent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

GOALS

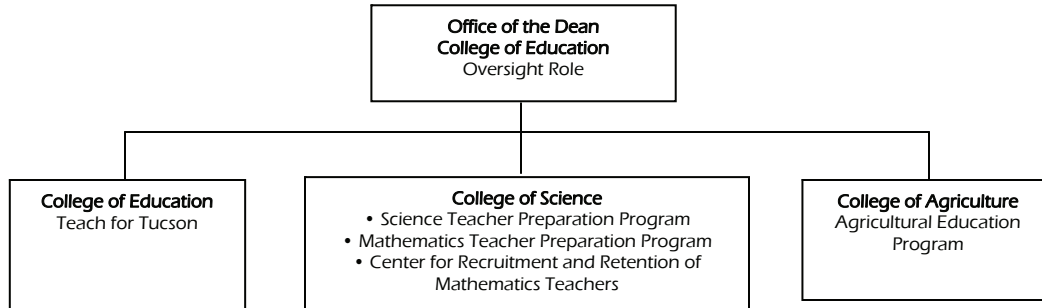
The primary goals of the Workforce Initiative are:

- Create a seamless progression in math and science from elementary through secondary school.
- Build incentives and support for students to enter math, science, and agricultural science teacher preparation programs.
- Establish incentives and support for math, science, and agricultural science teachers to stay in teaching locally.
- Mature programs that will accomplish quantitative goals of graduating 456 math, science, and agricultural science



MANAGEMENT

Dr. Leslie Tolbert, Vice President for Research, Graduate Studies, and Economic Development is responsible for overall management of the University's TRIF activities. The organizational management structure for the Workforce Initiative consists of leadership from the three colleges under which these programs are developed and executed, overseen by Dr. Ron Marx, Dean of the College of Education. Additionally, a multi-college management committee will oversee the implementation of the plan to ensure that the goals are met.



- Office of the Dean of the College of Education: Ron Marx, Dean
- College of Education: Teach for Tucson: Bob Hendricks, Associate Dean
- College of Science: Gail Burd, Associate Dean
 - Science Teacher Prep: Ingrid Novodvorsky, Assistant Professor of Physics
 - Math Teacher Prep: Virginia Horak, Associate Professor of Mathematics
 - Center for Recruitment: Fred Stevenson, Professor of Mathematics
- College of Agriculture and Life Sciences: Dave Cox, Associate Dean
 - Agriculture Education: Jack Elliot, Professor of Agriculture Education

ADVISORY BOARD



Through the auspices of the College of Education, the Professional Preparation Board (PPB) serves as a P-12 and community college liaison organization. Members include administrators (e.g., superintendents or associate superintendents)

from all Tucson area schools, representatives from each CoE department, representatives from all UA colleges engaged in and related to teacher preparation, and Pima College administrators. The executive director of the PPB is Carolyn Dumler, Assistant Superintendent of the

Marana School District. The PPB meets monthly through the academic year and ensures a close working relationship among all represented parties to improve teacher education and develop collaborations among member organizations to advance P-12 effectiveness. A subcommittee from the PPB serves in advisory capacity to the Workforce Initiative:

- Jeannie Favela, Director of Bilingual Education, Sunnyside School District
- Thomas Drexel, Director, Presidio Charter Schools
- Debbie D' Amore, Chief Deputy, Office of the Pima County Superintendent
- Carolyn Dumler, Assistant Superintendent, Marana School District

LEARN MORE

- ◆ Contact Dr. Ronald W. Marx, Dean, The University of Arizona College of Education, at ronmarx@email.arizona.edu or 520-621-1081.
- ◆ Contact Dr. Leslie Tolbert, Vice President for Research, Graduate Studies, and Economic Development, The University of Arizona, at Tolbert@email.arizona.edu or 520-621-3513.
- ◆ Visit the College of Education at www.coe.arizona.edu and read the complete business plan for the Workforce Initiative: The Educator Development Plan.



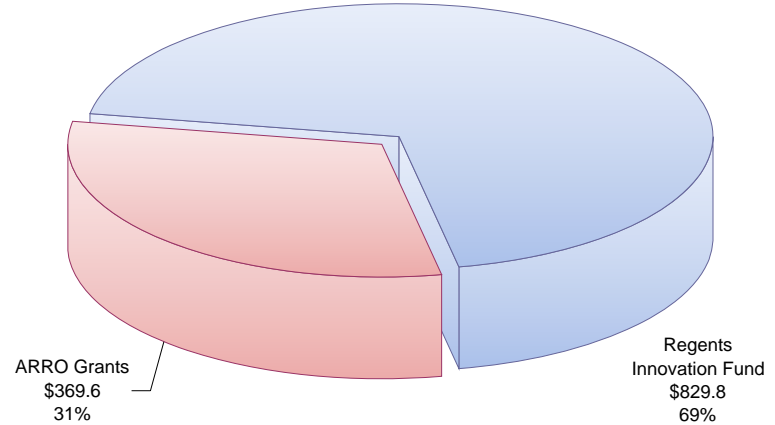
**ABOR CENTRAL OFFICE
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY**

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 REVISED BUDGET</i>	<i>FY 2008 BUDGET</i>	<i>FY 2009 BUDGET</i>	<i>FY 2010 BUDGET</i>	<i>FY 2011 BUDGET</i>
REVENUE							
Carryforward	\$ 724,834	\$ 724,834	\$ 13,235,133	\$ -	\$ -	\$ -	\$ -
TRIF Revenue	1,749,262	13,709,670	1,482,116	1,600,000	1,600,000	1,600,000	1,600,000
TOTAL REVENUE	\$ 2,474,096	\$ 14,434,504	\$ 14,717,249	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000
EXPENDITURES							
OPERATING BUDGET							
Personal Services	\$ 75,000	\$ 114,429	\$ 98,800	\$ -	\$ -	\$ -	\$ -
ERE	9,007	24,618	21,600	-	-	-	-
All Other Operating	194,993	71,763	364,065	-	-	-	-
TOTAL OPERATING BUDGET	279,000	210,810	484,465	100,000	100,000	100,000	100,000
GRANTS/PROJECTS							
Regents Innovation Fund	1,589,227	726,008	1,512,518	1,000,000	1,000,000	1,000,000	1,000,000
Arizona Regents Reach Out (ARRO) Grants	600,000	262,554	762,554	500,000	500,000	500,000	500,000
Over-realized Revenue Proposals TBD	-	-	11,957,712	-	-	-	-
TOTAL GRANTS/PROJECTS	2,189,227	988,562	14,232,784	1,500,000	1,500,000	1,500,000	1,500,000
EXPENDITURES GRAND TOTAL	\$ 2,468,227	\$ 1,199,372	\$ 14,717,249	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000
SUMMARY BY INITIATIVE							
Regents Innovation Fund:							
Learner Centered Education	\$ 820,393	\$ 278,172	\$ 839,013	\$ -	\$ -	\$ -	\$ -
UA College of Medicine-Phoenix Planning	250,000	200,011	100,000	-	-	-	-
Information Technology	180,000	127,894	180,000	-	-	-	-
Arizona Water Institute	150,000	150,000	200,000	-	-	-	-
University Redesign	-	8,884	-	-	-	-	-
Operating	64,738	64,816	73,465	-	-	-	-
Emerging Issues	253,834	-	504,505	-	-	-	-
Total Regents Innovation Fund	1,718,965	829,777	1,896,983	1,000,000	1,000,000	1,000,000	1,000,000
Arizona Regents Reach Out (ARRO) Grants	749,262	369,595	862,554	600,000	600,000	600,000	600,000
Over-realized Revenue Proposals TBD	-	-	11,957,712	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 2,468,227	\$ 1,199,372	\$ 14,717,249	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000

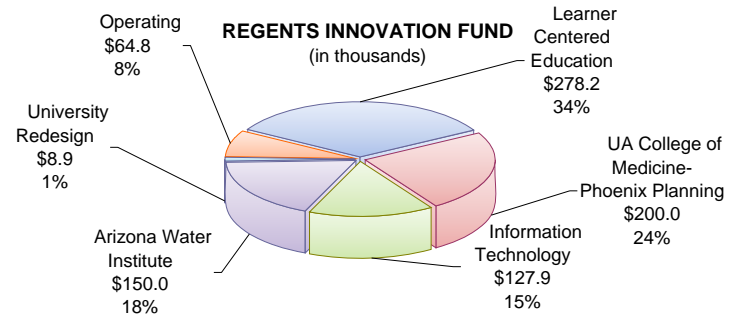
**ABOR CENTRAL OFFICE
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL / FY 2007 - 2011 BUDGETS
SUMMARY**

	<i>FY 2006 REVISED BUDGET</i>	<i>FY 2006 ACTUAL</i>
REVENUE		
Carryforward	\$ 724,834	\$ 724,834
TRIF Revenue	1,749,262	13,709,670
TOTAL REVENUE	\$ 2,474,096	\$ 14,434,504
EXPENDITURES		
OPERATING BUDGET		
Personal Services	\$ 75,000	\$ 114,429
ERE	9,007	24,618
All Other Operating	194,993	71,763
TOTAL OPERATING BUDGET	279,000	210,810
GRANTS/PROJECTS		
Regents Innovation Fund	1,589,227	726,008
Arizona Regents Reach Out (ARRO) Grants	600,000	262,554
Over-realized Revenue Proposals TBD	-	-
TOTAL GRANTS/PROJECTS	2,189,227	988,562
EXPENDITURES GRAND TOTAL	\$ 2,468,227	\$ 1,199,372

FY 2006 CENTRAL OFFICE ACTUAL TRIF EXPENDITURES
(in thousands)



SUMMARY BY INITIATIVE		
Regents Innovation Fund:		
Learner Centered Education	\$ 820,393	\$ 278,172
UA College of Medicine-Phoenix Planning	250,000	200,011
Information Technology	180,000	127,894
Arizona Water Institute	150,000	150,000
University Redesign	-	8,884
Operating	64,738	64,816
Emerging Issues	253,834	-
Total Regents Innovation Fund	1,718,965	829,777
Arizona Regents Reach Out (ARRO) Grants	749,262	369,595
Over-realized Revenue Proposals TBD	-	-
EXPENDITURES GRAND TOTAL	\$ 2,468,227	\$ 1,199,372



ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
REGENTS INNOVATION FUND SUMMARY

	<i>FY 2006 REV BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 BUDGET</i>
REVENUE			
Carry Forward	\$ 724,834	\$ 724,834	\$ 896,983
TRIF Revenue	1,000,000	1,001,926	1,000,000
TOTAL REVENUE	<u>\$ 1,724,834</u>	<u>\$ 1,726,760</u>	<u>\$ 1,896,983</u>
EXPENDITURES			
OPERATING BUDGET			
Personal Services	\$ 75,000	\$ 69,824	\$ 71,100
ERE	9,007	15,661	14,100
All Other Operating	45,731	18,284	299,265
Subtotal Operating Budget	<u>129,738</u>	<u>103,769</u>	<u>384,465</u>
GRANTS/PROJECTS:			
Learner-Centered Education	803,893	264,880	539,013
The University of Arizona College of Medicine-Phoenix Planning	212,500	191,245	100,000
Information Technology Collaborative	169,000	119,883	169,000
Arizona Water Institute (AWI)	150,000	150,000	200,000
Emerging Issues	253,834	-	504,505
Subtotal Grants/Projects	<u>1,589,227</u>	<u>726,008</u>	<u>1,512,518</u>
EXPENDITURES GRAND TOTAL	<u>\$ 1,718,965</u>	<u>\$ 829,777</u>	<u>\$ 1,896,983</u>
SUMMARY BY INITIATIVE			
Learner-Centered Education	\$ 820,393	\$ 278,172	\$ 839,013
The University of Arizona College of Medicine-Phoenix Planning	250,000	200,011	100,000
Information Technology Collaborative	180,000	127,894	180,000
Arizona Water Institute (AWI)	150,000	150,000	200,000
Arizona University System Redesign Study	-	8,884	-
Operating	64,738	64,816	73,465
Emerging Issues	253,834	-	504,505
EXPENDITURES GRAND TOTAL	<u>\$ 1,718,965</u>	<u>\$ 829,777</u>	<u>\$ 1,896,983</u>

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TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

LEARNER CENTERED EDUCATION



September 1, 2006

LEARNER CENTERED EDUCATION (LCE) INITIATIVE

In 2001, the Arizona Board of Regents authorized \$500,000 of the TRIF Regents Innovation Fund from Proposition 301 monies for grants to faculty to improve and expand learner centered education throughout the university system. The purpose of learner centered education is to change the dynamics of student-faculty interaction to optimize student learning and learning outcomes (focusing on what is learned rather than on what is taught); to utilize technology to create opportunities for student learning; to utilize student peer interaction (collaborative learning); and to create more active learning venues for students beyond the standard lecture and discussion method.

Beginning in 2002, 11 to 20 grants have been awarded annually to faculty in the university system in one of these funding ranges:

Up to \$24,999: Individual faculty, course, or program projects.

Up to \$49,999: Multiple departments, university-wide, or campus-wide projects.

Up to \$100,000: Multiple university projects. The highest funding level is awarded only to substantial tri-university initiatives.



The Tri-University collaboration on learner centered practice (2004).

Projects are 18 months in length and are awarded for faculty development; course or program modification; assessment; or research. Funding began on April 1, 2006 for the 11 projects awarded in 2006. During the first four grant cycles (2002-2005), it is estimated that more than 429 faculty teaching 397 courses to 32,750 students have been directly impacted through 68 LCE-funded projects.

Contents

Introduction	1
Award Data 2002-2006	2
FY 2006 Awards	3-4
Financial Information	5
Impact	5-6
Advisory Boards	6
Learn More	6



LEARNER CENTERED EDUCATION AWARDS 2002-2006

AWARDS BY INSTITUTION

	2006	2005	2004	2003	2002	TOTAL
ASU	2	4	3	8	4	21
NAU	5	4	5	2	7	23
UA	3	4	6	5	8	26
NAU/UA				1		1
ASU/UA	1					1
NAU/ASU			1	1		2
TRI-U	<u>0</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>5</u>
	11	14	16	18	20	79

FUNDING BY INSTITUTION

	2006	2005	2004	2003	2002	Total
ASU	\$49,911	\$120,432	\$99,690	\$214,191	\$90,000	\$524,313
NAU	165,536	124,888	104,985	60,319	141,922	432,114
UA	84,948	97,916	141,139	125,930	195,137	560,122
ASU/NAU			49,400	50,000		99,400
NAU/UA				24,883		24,883
TRI-U	<u>48,871</u>	<u>195,700</u>	<u>99,997</u>	<u>95,555</u>	<u>100,000</u>	<u>491,252</u>
Total	\$349,266	\$538,936	\$495,211	\$570,878	\$527,059	\$2,481,350

BY FUNDING LEVEL

	2006	2005	2004	2003	2002	Total
Up to \$24,999	4	5	10	7	11	37
Up to \$49,999	7	7	5	8	7	34
Up to \$100,000	<u>0</u>	<u>2</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>8</u>
	11	14	16	18	20	79

*Learner centered education has been a high priority for the Arizona Board of Regents,
as reflected in the Arizona University System's Strategic Directions.*

Learning Centered Education (LCE) FY 2006 Awards

Online LCE Idea Book: Integrating LCE, Learning Styles, and Technology

La Verne Abe Harris, Department of Technology Management, ASU Polytechnic Campus, \$24,911

The focus of the proposed project is the creation of a multimedia learner centered knowledge community center called "LCE IDeaBook". The initial targeted recipients of the research in this study are faculty, who have the charge of creating the ASU Polytechnic Core curriculum, developed with the intent of portability across disciplines.

Podcasts for Learner Centered Education: Choosing the Time and Place for Faculty Development

Susan Ledlow, Teaching Consultant, CLTE & DMIT, ASU Tempe Campus, \$25,000

The Center for Learning and Teaching Excellence and the Center for Learning and Teaching Excellence and the Digital Media Studio within Digital Media and Instructional Technologies propose the development of a series of podcasts for faculty development. The project primarily addresses the ABOR funding priority of faculty development, but is also related to the LCE research priority. During the first half of the project, we will develop approximately 20 audio programs that relate to learner centered strategies such as interactive lecture, cooperative learning, writing to learn, classroom assessment techniques, and active engagement strategies for large classes. In the second half of the project, we will distribute and assess the impact of these programs.

TIMES: Training Intuition in Math for Engineering Success

Phillip A. MIsna, College of Engineering & Natural Sciences, NAU, \$42,565

The TIMES project will be an initial pilot test of a set of dedicated training activities and tools designed to improve student performance in their entry-level engineering foundation courses. The goal is to improve student success and retention in engineering by improving their abilities to apply key numerical and mathematics skills. The results will be measured and compared to establish the degree of effectiveness of the TIMES project overall. The plan is to broaden the scope in a future implementation to include other scientific

disciplines whose students often have difficulty in their entry-level courses.

Art Education Student-to-Student Mentorship Project

Pamela Geiger Stephens, Art Education, NAU, \$25,000

The Art Education Student-to-Student Mentorship Project brings together novice art education students with their senior-level colleagues in a model program that will provide learner centered activities for both groups. This model project is devised to address the changing needs of teacher preparation programs and the students enrolled in them. It will serve as a replicable learner centered model for other teacher training programs.

Learner Centered Transformation of Freshman Circuits Course

Elizabeth J. Brauer, Electrical Engineering, NAU, \$24,803

Because they are difficult to conceptualize and harder to comprehend, electric circuits have confounded many beginning engineering students, leading to problems in retention. We propose a transformation of the freshman electric circuits course using learner centered principles to develop an effective, personalized learning environment. Our effort focuses on the modification of the introductory EE course, EE 188 Electrical Engineering I, and the associated laboratory, EE 188L EEILab, using learner centered education techniques.

Incorporating Learner Centered Education Strategies in Large Enrollment Biology Lectures

Catherine Ueckert, CSTL, NAU, \$24,999

Using an action research model, biology faculty will examine, implement, and evaluate learner centered instructional strategies to reach the goal of increasing the level of student achievement in the introductory biology course, BIO 181: Unity of Life I, which is characterized by both high enrollments and a high DFW rate. Outcomes will include the creation and implementation of an assessment tool for biology content knowledge and attitudes, a modification of BIO 181 to include LCE-based instructional strategies, pre/post data on the success of the modification, and a dissemination plan for faculty development in biology and the other science department.

[Increasing Student Engagement and Success in Large General Education Class Settings](#)

Karen Pugliesi, Office of the Vice Provost for Undergraduate Studies, NAU, \$48,169

This is a faculty development program that will promote the use of learner centered pedagogical strategies in the large lower division liberal studies classes. Twelve faculty who teach large lower division liberal studies classes and three faculty with experience in integrating learner centered pedagogy in large classes (project fellows) will participate in a year-long professional development program leading to the incorporation of learner centered pedagogical practices in their classes. The project will involve cohort faculty in seminars and work sessions, including peer consultations, throughout the year to examine the implications of LCE for large class settings and to implement course and curricular innovations. Besides offering peer consultation to other cohort faculty, project fellows will undertake research on the impact of learner centered pedagogy in a large class setting.

[The World We Create: Studying the Efficacy of an Innovative Approach to Foster Learning for Both Non-Science Majors and Prospective Science Teachers](#)

Vicente Talanquer, Dept of Chemistry & Science Teacher Preparation Program in the College of Science, UA, \$24,948

The central goal of this project is to investigate the educational impact of an innovative teaching model that will involve prospective secondary school science teachers in the planning, implementation, and evaluation of a learner centered Tier I natural science course for non-science majors. The requested resources will allow us to analyze the data collected during two test periods, to design and implement necessary changes based on the evidence obtained, and to build a solid teaching model for improving both general education and the preparation of future science teachers.

[Learner Centered Engineering: Integrating Product Dissection into the Engineering Foundation Course](#)

R. Reid Bailey, College of Engineering, UA, \$25,000

The purpose of this proposal is to enhance the University of Arizona engineering foundation course by incorporating a new, hands-on product dissection project that will increase student-faculty contact, encourage cooperation among students, and promote active learning. In addition, a

Learner Centered Education (LCE) workshop will be developed to teach foundation course faculty members (twenty sections of the course are taught by faculty each year) to effectively utilize LCE techniques in the foundation course as well as other courses within the college. Finally, an improved method for assessing the learning outcomes for the foundation course will be developed. Consistent with the 2006 priorities, this project is specifically designed to enhance student learning in a foundation course that enrolls a high number of students.

[University of Arizona Focus on LCE: Preparing Faculty to Lead Learner Centered Teaching Practices](#)

Julie F. Padgett, University Teaching Center, UA, \$35,000

The intent of the project is two-fold: (1) to develop a critical mass of faculty who will engage collaboratively in the study of learner centered instructional practice, apply what they learn, assess the impact of what they learn, and share their learning with other faculty and graduate teaching assistants, and (2) for those faculty to develop and implement an LCE advocacy plan for each of their departments that will ultimately bring faculty and institutional culture to actively embrace more learner centered approaches to college education.

[Engineering Connections Environments: Developing Learner Centered Interfaces to Technical Content Modules](#)

Darryl Morrell, Department of Engineering, ASU Polytechnic Campus, \$48,871

We propose a joint project between ASU and UA that builds upon the existing Engineering Science Course Modules developed by the UA College of Engineering and Mines. We propose to develop interfaces to the modules in the form of Engineering Connection Environments that embed the modules within a project-based learning environment and integrate them with problem-based learning exercises, background prerequisite material, and additional real world applications. This structure will be piloted in the ASU engineering program's sophomore curriculum during the 2006/2007 academic year.

FINANCIAL INFORMATION

	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 ACTUAL	FY 2006 REV BUDGET	FY 2006 ACTUAL	FY 2007 BUDGET
REVENUE							
Carry Forward	-	\$ 297,864	\$ 307,772	\$ 293,560	\$ 718,965	\$ 718,965	\$ 539,013
TRIF Revenue	969,239	560,008	516,500	500,000	101,428	101,428	300,000
TOTAL REVENUE	\$ 969,239	\$ 857,872	\$ 824,272	\$ 793,560	\$ 820,393	\$ 820,393	\$ 839,013
EXPENDITURES							
OPERATING BUDGET							
Personal Services	\$ 3,113	\$ 12,962	\$ 9,365	\$ 5,180	\$ 9,400	\$ 9,959	\$ 12,100
ERE	744	2,461	1,491	828	1,600	2,502	3,000
All Other Operating	2,469	5,254	2,121	1,575	5,500	831	284,900
Subtotal Operating Budget	6,326	20,677	12,977	7,583	16,500	13,292	300,000
GRANTS/PROJECTS:							
FY 2002 LCE Grants	567,107	272,290	(15,354)	(12,322)	53,249	-	53,249
FY 2003 LCE Grants	-	282,198	282,199	(38,896)	36,895	-	36,895
FY 2004 LCE Grants	-	-	247,367	248,626	4,008	(9,779)	13,787
FY 2005 LCE Grants	-	-	-	257,258	226,241	244,759	(18,518)
FY 2006 LCE Grants	-	-	-	-	483,500	29,900	453,600
FY 2007 LCE Grants TBD	-	-	-	-	-	-	-
Subtotal Grants/Projects	567,107	554,488	514,212	454,666	803,893	264,880	539,013
EXPENDITURES GRAND TOTAL	\$ 573,433	\$ 575,165	\$ 527,189	\$ 462,249	\$ 820,393	\$ 278,172	\$ 839,013

Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a six-tenths cent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

IMPACT

EXEMPLAR PROJECTS

Communication Assessment and Learning Lab – ASU West

This project has leveraged initial funding from an LCE grant to produce a campus asset that now receives university funding and has managed to attract outside investment in the form of contracts with state and corporate entities. This lab provides an opportunity for student mentors to work with other students facing public speaking, professional interview, classroom assignment, and other communication occasions. This example of leveraging grant funds provides an exemplar of one desirable outcome of the LCE Grant Program.

Tri-University Assessment of Writing

Another example of successful leveraging of LCE grant funds is reflected in the swirl of follow-on activities growing out of the tri-university grant awarded to the writing programs of the three universities. Building upon the momentum established as faculty from each of the campuses convened to compare outcomes and philosophies, the group developed a common rubric for reviewing student papers and inspired an examination of the link between campus philosophy and the support role the programs play across the curriculum. The grant funded an opportunity for the group to review between 700 and 1,000 writing portfolios from first-year composition

students. As one example of the follow-on activity, the UA Writing Program took the initial grant-funded activity and extended the analysis to include a follow-up content analysis of what people were talking about at each of the discussion tables during the grant-funded retreat. Later, an analysis of the high-performing and low-performing portfolios provided an opportunity to identify what defines these levels of performance. The analysis further revealed what instructors value in the review of papers, along with the areas where students are having challenges. This analysis was followed by focus groups with teaching assistants and instructors, a group including over 160 teachers, who directly impact 12,000 students annually. "Writing makes learning visible in the classroom; it also makes learning visible in the institution," so this investment in focusing on how students were doing and how the program might have more impact suggests tremendous reach from a relatively small financial investment

Science Learning Center – NAU

Focusing upon the faculty professional development priorities of learner centered education and melding that with a need to help faculty develop assessment expertise, the Science Learning Center at NAU leveraged its LCE grant to move beyond working with faculty on revising their syllabi to make courses more learner centered, to a follow-

(Continued on page 6)

IMPACT (CONTINUED FROM PAGE 5)

on set of workshops that coached them on developing assessment strategies that would articulate with the new learning outcomes and course strategies. This work is groundbreaking in higher education and has attracted requests and contracts for the services offered by the center from other states.

Across the system, these stories abound, bring exposure and influence to the learner centered initiative, and address the core

values promoted in discussions by the Arizona Board of Regents leading up to the creation of the LCE Grant Program.

*Excerpt from "Evaluation of the Arizona Board of Regents Learner Centered Education Initiative," Dr. Melvin Hall, Consultant. February 2006.

FY 2006 PERFORMANCE MEASURES / DELIVERABLES	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 PROJECTED	FY 2006 PROJECTED
Curriculum Innovations					
Number of courses modified to LCE focus	95	123	104	68	72
Faculty addressing curriculum through LCE grants	188	147	111	141	133
Workforce Contributions					
Students affected by LCE grant projects	14,000	5,362	6,392	8,491	10,500

ADVISORY BOARDS

LCE Team

Functions:

Provides oversight of LCE program
 Approves funding for grants
 Approves substantive changes to grant process/criteria

Members:

2 Regents

Jack Jewett
 Benjamin Graff

3 Provosts

Milt Glick, ASU
 Liz Grobsmith, NAU
 George Davis, UA

3 Arizona Faculties Council Members

Ernest Hirata, ASU
 Charles Connell, NAU
 Robert Mitchell, UA

LCE Advisory Council

Functions:

Develops grant review process and reviews rubric
 Revises grant processes annually
 Reviews, revises RFP; recommends substantial changes to LCE Team
 Participates in grant review and serves as training coordinators for their campus

Members:

Provost Appointees

Ruth Jones, ASU
 Susanna Maxwell, NAU
 Jerry Hogel, UA

3 Arizona Faculties Council Members

Richard Morris, ASU
 Charles Connell, NAU
 Jennifer Jenkins, UA

LCE Review Panel (Organized by University-Based Teams)

Functions: Review and rank grants in teams. Each team has a team leader. Co-coordinators (LCE Advisory Council) for each campus provide training. **Selection Committee:** Team leaders and training coordinators comprise the committee to select grants to recommend for funding to LCE Team, based on team rankings.

Members: Team Composition: 1 Provost Appointee and 2 Arizona Faculties Council appointees per team. Each student government president may appoint 2 student reviewers as well. **Fall 2006: 9 Teams, 2 per university:** Each provost to appoint 3 faculty. Each Arizona Faculties Council to appoint 6 faculty.

LEARN MORE

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- Contact Mark Denke, Assistant Executive Director, Academic and Student Affairs, Arizona Board of Regents, 2020 North Central Avenue, Suite 230, Phoenix, Arizona 85004, (602) 229-2503, mark.denke@azregents.edu.



ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND

The University of Arizona College of Medicine-Phoenix Planning

	<i>FY 2006 REV BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 BUDGET</i>
REVENUE			
Carry Forward	\$ -	\$ -	\$ -
TRIF Revenue	250,000	250,000	100,000
TOTAL REVENUE	<u>\$ 250,000</u>	<u>\$ 250,000</u>	<u>\$ 100,000</u>
 EXPENDITURES			
OPERATING BUDGET			
Personal Services	\$ -	\$ -	\$ -
ERE	-	-	-
All Other Operating	37,500	8,766	-
Subtotal Operating Budget	<u>37,500</u>	<u>8,766</u>	<u>-</u>
 GRANTS/PROJECTS:			
Molera Alvarez Group	72,000	112,996	100,000
Smith Group	-	78,249	-
To be determined	140,500	-	-
Subtotal Grants/Projects	<u>212,500</u>	<u>191,245</u>	<u>100,000</u>
 EXPENDITURES GRAND TOTAL	 <u>\$ 250,000</u>	 <u>\$ 200,011</u>	 <u>\$ 100,000</u>

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND

The University of Arizona College of Medicine-Phoenix Planning

FY 2006 INITIATIVE OVERVIEW

Funding will be provided to support planning for The University of Arizona College of Medicine in Phoenix. Renovation work is almost complete on the three former Phoenix Union High School buildings at the Phoenix Biomedical Campus site between 3rd and 7th Streets and Van Buren and Fillmore Streets in downtown Phoenix. Ceremonies are scheduled for October 10, 2006. Groundbreaking for the Arizona Biomedical Collaborative 1 (ABC 1) research facility took place in November 2005 with completion scheduled in March 2007. The first class of 24 medical student is scheduled to begin in July 2007. Planning for the Campus is being coordinated by the Governor's Arizona Commission on Medical Education and Research (ACMER). At build-out in 2025, the Phoenix Program will have 150 students in each class. When combined with the 110 students in the Tucson Program, The University of Arizona College of Medicine will be on par with the nation's largest medical schools, making it more competitive for federal grants and contracts, as well as helping to meet the critical shortage of physicians in Arizona.

FY 2006 GOALS/OBJECTIVES

1. By June 30, 2006, complete all renovation work on the former Phoenix Union High School buildings (preliminarily designated COM 1, COM 2, and COM 3).
2. Break ground for ABC 1 in November 2005.

FY 2006 PERFORMANCE MEASURES/DELIVERABLES

		<i>FY 2006 PROJECTED</i>	<i>FY 2007 PROJECTED</i>
	Return on Investment		
1.	Complete COM, 1, 2, 3 renovations		Completed
2.	Break ground on ABC 1 in November 2005		Completed
3.	Master Plan for site		Completed
	Curriculum Innovations		
4.	Potential for medical classes and research	Ongoing	Ongoing
	Partnerships/Collaborations		
5.	Collaborative effort between UA and ASU	Ongoing	Ongoing
6.	Collaborative effort with City of Phoenix	Ongoing	Ongoing

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2006 ACTUAL/FY 2007 BUDGET

REGENTS INNOVATION FUND

The University of Arizona College of Medicine-Phoenix Planning

FY 2006 RESULTS AND ACCOMPLISHMENTS

On August 4, 2004, then-Regents President Gary Stuart, then-UA President Peter Likins, and ASU President Michael Crow signed an historic Memorandum of Understanding (MOU) Regarding the Expansion of Medical Education and Research in Phoenix.

Renovation of the three former Phoenix Union High School buildings began in April 2005 on the Phoenix Biomedical Campus, and dedication ceremonies are scheduled for October 10, 2006. ABC 1, to house UA and ASU researchers, broke ground in November 2005 and is scheduled for completion in March 2007. Planning has begun for ABC 2 and the Education building for the campus.

The first class of 24 medical students in the UA College of Medicine-Phoenix Program is scheduled to begin in July 2007.

All ABOR reports submitted to the legislature relating to The University of Arizona College of Medicine-Phoenix are available at: www.azregents.edu.

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
Information Technology Collaborative

	<i>FY 2006 REV BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 BUDGET</i>
REVENUE			
Carry Forward	\$ -	\$ -	\$ -
TRIF Revenue	180,000	180,000	180,000
TOTAL REVENUE	<u>\$ 180,000</u>	<u>\$ 180,000</u>	<u>\$ 180,000</u>
EXPENDITURES			
OPERATING BUDGET			
Personal Services	\$ 10,000	\$ 7,031	\$ 10,000
ERE	-	571	-
All Other Operating	1,000	409	1,000
Subtotal Operating Budget	<u>11,000</u>	<u>8,011</u>	<u>11,000</u>
GRANTS/PROJECTS:			
Network Management System	100,000	75,000	-
SharePoint Project	40,000	44,883	-
Other Projects to be determined	29,000	-	169,000
Subtotal Grants/Projects	<u>169,000</u>	<u>119,883</u>	<u>169,000</u>
EXPENDITURES GRAND TOTAL	<u>\$ 180,000</u>	<u>\$ 127,894</u>	<u>\$ 180,000</u>

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
Information Technology Collaborative

FY 2006 INITIATIVE OVERVIEW

The Arizona Auditor General has recommended that the Board of Regents exercise more oversight of university information technology. An IT project approval process and extensive reporting requirements for IT expenditures are now in place. Collaborative IT projects that can improve service and/or result in cost savings hold ongoing particular interest to the Regents. Numerous possibilities exist for the efficient and effective use of seed money, including the continued use of consultants to update the architecture developed for planning future IT development. Other examples include implementation of a central office SharePoint collaborative site, with active pilot sites for the Audit and Capital Committees, and IT projects at the three universities.

FY 2006 GOALS/OBJECTIVES

1. Begin a tri-university effort to adopt and implement a trusted tri-university federated identity architecture, which would also provide the opportunity to establish identity trust relationships with other federal, state, and higher education IdM systems; includes training and consultant assistance.
2. Development of an Information Technology Architecture facilitates the application of IT to university initiatives and projects. Its goal is to aid in the efficient and effective implementation of technology at our universities by describing a direction for current and future IT activities, supported by underlying principles, standards, and best practices.
3. SharePoint project - server, training, pilot projects.

FY 2006 PERFORMANCE MEASURES/DELIVERABLES

		<i>FY 2006 PROJECTED</i>	<i>FY 2006 ACTUAL</i>
	Return on Investment		
1.	SharePoint assessment and design of pilot projects	Completed	Completed
2.	Information Technology Architecture Maintenance	Completed	Completed
3.	Tri-University Identity Federation for the Arizona University System (ATIF)	Completed	Completed

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
Information Technology Collaborative

FY 2006 RESULTS AND ACCOMPLISHMENTS

1. The design, training, and implementation of SharePoint for the central office and related university departments has begun with the Audit and Capital Committees collaborative work sites, installation of a dedicated server, and training for key staff. Other Committee sites, central office collaborative worksites, and a Regents Resource Center site are being implemented on a sequential plan.
2. The Tri-University Architecture document will remain highly flexible to accommodate the ever-changing nature of IT. Its goal is to aid in the efficient and effective implementation of technology at our universities, supported by underlying principles, standards, and best practices. It will further facilitate tri-university collaboration efforts by establishing a common vision for the future of IT at our universities. The use of technology is a large and growing element of the universities' environment and overall expenditures. Arizona's universities collectively are interested in increasing service quality and saving money through the best possible use of IT.

FY 2007 INITIATIVE OVERVIEW

An IT project approval process and extensive reporting requirements for IT expenditures are now in place to facilitate Board oversight of university IT projects. Collaborative IT projects that can improve service and/or result in cost savings continue to be of particular interest to the Regents. A consultant has been engaged to facilitate ASU's implementation of its HR and Student Information Systems (OASIS). The OASIS system is a version of PeopleSoft, installed at NAU. The design, training, and implementation of SharePoint for the central office and related university departments has begun with the Audit and Capital Committees collaborative work sites. Other Committee work sites and a Regents Resource Center site are being implemented on a sequential plan. Numerous possibilities exist for the efficient and effective use of seed money, such as the continued use of a consultant to maintain and support the architecture for planning future IT development at the three universities. \$9,000 has been budgeted for such a consultant in FY 2007. The progress toward ATIF implementation will continue.

FY 2007 GOALS/OBJECTIVES

Additional goals and objectives will be provided when final IT projects are selected.

1. Implementation of SharePoint
2. Oversee ongoing IT Architecture development
3. Consultant for OASIS implementation at ASU

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
Information Technology Collaborative

4. Tri-University Identify Federation for Arizona University System (ATIF) will continue

FY 2007 PERFORMANCE MEASURES/DELIVERABLES

	<i>FY 2007 PROJECTED</i>
Return on Investment	
1. Performance measures will be provided when final IT projects are selected.	TBD
Continued oversight of IT Architecture development	
Implementation of major central office functions using SharePoint, including Regents Resource Center	
Partnerships/Collaborations	
2. Performance measures will be provided when final IT projects are selected.	TBD

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
 Arizona Water Institute (AWI)

	<i>FY 2006 REV BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 BUDGET</i>
REVENUE			
Carry Forward	\$ -	\$ -	\$ -
TRIF Revenue	150,000	150,000	200,000
TOTAL REVENUE	\$ 150,000	\$ 150,000	\$ 200,000
EXPENDITURES			
OPERATING BUDGET			
Personal Services	\$ -	\$ -	\$ -
ERE	-	-	-
All Other Operating	-	-	-
Subtotal Operating Budget	-	-	-
GRANTS/PROJECTS:			
The University of Arizona	150,000	150,000	200,000
Subtotal Grants/Projects	150,000	150,000	200,000
EXPENDITURES GRAND TOTAL	\$ 150,000	\$ 150,000	\$ 200,000

FY 2006 INITIATIVE OVERVIEW

\$150,000 of FY 2006 TRIF Regents Innovation Funds was approved by the Board for allocation to The University of Arizona to support the hiring of an Executive Director and Administrative Assistant for the Arizona Water Institute (AWI).

ABOR CENTRAL OFFICE
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL/FY 2007 BUDGET
REGENTS INNOVATION FUND
Arizona Water Institute (AWI)

Arizona's three state universities, The University of Arizona, Arizona State University, and Northern Arizona University, each have world-class expertise that can be harnessed to support water policy, planning, and technology development. Under the leadership of Governor Janet Napolitano, AWI was formed to unite the cutting-edge work of the universities in a single super-center of information and technology focused on water education, research, community assistance, and economic development.

The mission of AWI is three-fold:

- Serve as the hub of research and technology development to give Arizona the tools to assure clean and sustainable water resources for the next century;
- Provide education, information, and analytical support to the public, government decision makers, water professionals, industry, and others about using, conserving, and managing water in arid environments;
- Be a resource for new water management technologies that produce new products and services for Arizona companies to export worldwide, thus creating a major new economic driver for Arizona.

AWI will also enhance the universities' abilities to attract top students from around the world by providing a mechanism through which the universities can offer collaborative and innovative, multidisciplinary water curricula.

AWI's Core Group, comprising representatives from ASU, NAU, UA, SRP, Intel, the Arizona Departments of Water Resources, Environmental Quality, and Commerce, and the Governor's Office, determined that a business plan for AWI was a critical first step and engaged the services of the Battelle Technology Partnership Practice Group to perform this work. The final business plan will soon be released.

FY 2006 RESULTS AND ACCOMPLISHMENTS

The work of AWI during FY 2006 is well documented and available at: www.azregents.edu

FY 2007 INITIATIVE OVERVIEW

\$200,000 will be allocated to The University of Arizona in FY 2007 to support the Executive Director and Administrative Assistant at AWI. Arizona State University, Northern Arizona University, and The University of Arizona are working with the Governor's Office, the Arizona Departments of Water Resources, Environmental Quality, and Commerce, and private sector partners Intel and SRP to continue work on selected AWI projects. Each of the three universities received \$500,000 from the State General Fund in FY 2007 to support the AWI campus coordinators and AWI projects.

ABOR CENTRAL OFFICE
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL/FY 2007 BUDGET
REGENTS INNOVATION FUND
Arizona Water Institute (AWI)

FY 2007 GOALS/OBJECTIVES

1. To continue financial support for the AWI Executive Director and Administrative Assistant.

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
Arizona University System Redesign Study

	<i>FY 2006 REV BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 BUDGET</i>
REVENUE			
Carry Forward	\$ -	\$ -	\$ -
TRIF Revenue	-	8,884	-
TOTAL REVENUE	\$ -	\$ 8,884	\$ -
EXPENDITURES			
OPERATING BUDGET			
Personal Services	\$ -	\$ -	\$ -
ERE	-	-	-
All Other Operating	-	8,884	-
Subtotal Operating Budget	-	8,884	-
GRANTS/PROJECTS:			
Subtotal Grants/Projects	-	-	-
EXPENDITURES GRAND TOTAL	\$ -	\$ 8,884	\$ -

FY 2006 INITIATIVE OVERVIEW

At its April 2005 meeting, the Board approved the proposed redesign recommended by the ABOR Feasibility and Planning Work Group. The final report, titled "A Redesigned Public University System," was published and distributed in July 2005. At the September 2005 Board meeting, the universities' implementation plans for the redesign initiative were approved.

ABOR CENTRAL OFFICE
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 ACTUAL/FY 2007 BUDGET
REGENTS INNOVATION FUND
Arizona University System Redesign Study

Reports generated during the feasibility and planning study are available online at www.abor.asu.edu. The website presents the products of the Work Group's four subcommittees, and contains copies of the Board of Regents' original redesign proposal, plus the 15 alternatives. The website also presents the reports of the Stakeholder Groups and comments made during public hearings.

The FY 2007 expenditures for this project supported printing costs invoiced after June 30, 2005.

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
 REGENTS INNOVATION FUND
Operating

	<i>FY 2006 REV BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 BUDGET</i>
REVENUE			
Carry Forward	\$ 5,869	\$ 5,869	
TRIF Revenue	318,572	311,614	73,465
TOTAL REVENUE	\$ 324,441	\$ 317,483	\$ 73,465
EXPENDITURES			
OPERATING BUDGET			
Personal Services	\$ 55,600	\$ 52,834	\$ 49,000
ERE	7,407	12,588	11,100
All Other Operating	1,731	(606)	13,365
Subtotal Operating Budget	64,738	64,816	73,465
GRANTS/PROJECTS:			
Subtotal Grants/Projects	-	-	-
EXPENDITURES GRAND TOTAL	\$ 64,738	\$ 64,816	\$ 73,465

FY 2007 OVERVIEW

The Operating budget supports implementation of Regents Innovation Fund projects, as well as administration of the system's TRIF fund, including budget preparation, accounting, and reporting functions.

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ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
ARIZONA REGENTS REACH OUT (ARRO) GRANTS

	<i>FY 2006 REV BUDGET</i>	<i>FY 2006 ACTUAL</i>	<i>FY 2007 BUDGET</i>
REVENUE			
Carry Forward	\$ -	\$ -	\$ 380,438
TRIF Revenue	749,262	750,032	482,116
TOTAL REVENUE	\$ 749,262	\$ 750,032	\$ 862,554
EXPENDITURES			
OPERATING BUDGET			
Personal Services	\$ -	\$ 44,605	\$ 27,700
ERE	-	8,957	7,500
All Other Operating	149,262	53,479	64,800
Subtotal Operating Budget	149,262	107,041	100,000
GRANTS/PROJECTS:			
FY 2007 Grants	-	-	500,000
FY 2006 Grants	600,000	262,554	262,554
Subtotal Grants/Projects	600,000	262,554	762,554
EXPENDITURES GRAND TOTAL	\$ 749,262	\$ 369,595	\$ 862,554

FY 2006 INITIATIVE OVERVIEW

The Arizona Regents Reach Out (ARRO) grant program was established by the Regents, through the IT/AZUN Committee, to offer faculty an opportunity to receive funding for proposals for innovation in distance learning.

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
ARIZONA REGENTS REACH OUT (ARRO) GRANTS

FY 2006 GOALS/OBJECTIVES

Grants are solicited in the following categories considered critical to the full implementation of distance-learning education throughout the university system:

- Promote educational merit, feasibility, demonstrate collaborative elements of the proposal and its benefit to the Arizona higher education environment
- Promote rapid development of high quality online, distance learning, or technology assisted projects
- Develop projects that meet a demonstrated demand or need in Arizona
- Develop projects that are transferable, portable, sharable, and scalable
- Develop projects that are in short supply but needed for graduation
- The collaboration, matching, and/or leverage funds on project offerings with other partners
- Apply existing innovations in new areas
- Explore opportunities for competency or performance-based assessment
- Are programs as contrasted to individual courses only
- Have not been previously funded by Arizona Regents University (ARU), Arizona Universities Network (AZUN), or Arizona Regents Reach Out (ARRO)
- Utilize inter- or intra-institutional collaboration

Priority is given to proposals that are collaborative across campuses and among the universities.

FY 2006 PERFORMANCE* MEASURES/DELIVERABLES (Estimated Numbers)

		<i>FY 2006 Cycle PROJECTED**</i>
1.	Number of courses developed or near completion	
2.	Number of course enhancements	
3.	Number of enrollments	
4.	Curriculum innovations	
5.	Partnerships and collaborative entities	
6.	Number of students affected	
7.	Number of faculty/peers affected	

*This is a new grant program with first awards issued in January 2006. Actual statistics are not available at this time.

** Final reports are due July 31, 2007.

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
ARIZONA REGENTS REACH OUT (ARRO) GRANTS

FY 2006 RESULTS AND ACCOMPLISHMENTS

60 proposals were submitted for the 2006 grant cycle: 9 were approved for funding from ARRO sources and 3 were approved for funding from AZUN sources.

Projects are funded for an 18-month period. Approximately one-half of the funds were released during FY 2006. The remainder will be released during FY 2007 upon receipt of the progress reports required of each grantee on or before December 2006.

ARRO GRANT AWARDS

University	ARRO Project Title	Project Summary	Grant Award
<p style="text-align: center;">ASU UA NAU</p>	<p>Creation of an Online Masters of Advanced Studies Degree in Geographic Education</p>	<p>ASU's Geography Department partners with ASU-Tempe College of Education, ASU-West's College of Teacher Education and Leadership, and Geography Faculty at the University of Arizona and NAU to complete a new on-line Master in Advanced Studies (MAS) in Geography Education. Surveys of K-12 teachers reveal a strong and growing demand for this program. The first-year class of fall 2007 would be held to a pilot of 20 students in year 1, growing to 50 by fall 2010. The demand for this program comes from rural and urban teachers needing advanced degrees for professional growth, middle school teachers lacking the 24 hours needed to be "highly qualified" under the No Child Left Behind legislation, and small-town and rural teachers looking for discipline-specific instruction. The ARRO grant would provide the last bit of funding needed to complete an on-line, innovative, and self-sustaining MAS in Geographic Education.</p>	<p style="text-align: center;">\$93,675</p>
<p style="text-align: center;">ASU</p>	<p>Preparation of BSN/MS Nursing Students with Second Degrees through an Online Accelerated Program</p>	<p>The purpose of this project is to envision and develop a program to prepare 2nd degree students for bachelor's and master's degrees in nursing using an online, hybrid approach. The targeted populations are those with previous college degrees who wish to begin a nursing career. In this proposal, focus groups will be held with currently enrolled second degree students to help guide the curriculum content and organization. Six courses for the first semester of the BSN generalist program will be developed in consultation with an instructional design media specialist. The total</p>	<p style="text-align: center;">\$49,810</p>

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
ARIZONA REGENTS REACH OUT (ARRO) GRANTS

		curriculum will be submitted for approval to appropriate bodies. This program will increase ASU nursing graduates by 14 percent.	
NAU	Preparing Prospective Teachers for Performance-Based Assessment and Their Futures	The purpose of this project is to prepare teacher candidates from Northern Arizona University for the upcoming Arizona Teacher Performance Based Assessment requirement, which will impact all new teachers in the state beginning June 2006. NAU will engage 40 pre-service secondary education teachers in a project designed to give them the knowledge and skills so they can create multi-media artifacts as performance assessments. Students will enhance their electronic portfolios to include performance based assessment evidence of teaching excellence.	\$49,995
NAU	Development of an Allied Health 2+2+2 Educational Model	This project will increase accessibility of bachelor's and master's degree programs for individuals in high demand allied health professions by expanding "anytime, anyplace" degree options through rapid, simultaneous development of two high quality online programs and modification of an existing 2+2 program. Degree articulations will be developed and implemented at the bachelor's and master's level in several allied health fields with multiple community college partners.	\$49,580
NAU	Reaching Out to Native Americans: Creating a Web-Based Liberal Studies and Diversity Course	The primary goal of this project is the creation of a Web-Based Native Peoples of North America course that will enable NAU to reach out to Native American students and increase their university enrollments statewide. The development of this online course will help fulfill components of NAU's mission and strategic plan "to be the nation's leading university serving Native Americans".	\$4,219
UA	UA General Education Online: Anytime Learning About Plants and Our World	This grant would fund the comprehensive revision of Nats 104 Plants and Our World Online at the University of Arizona. The course will be revised with creative, interactive exercises, activities, and content assessment tools, in addition to adopting a new textbook and converting from WebCT to D2L web-based course management system. Plants and Our World is a distance learning Tier One Natural Science option that fulfills General Education graduation requirements at UA.	\$28,922
UA	ArizonaNativeNet Tribal Leadership Distance Learning Education Project	This proposal seeks funding support for the development of two distance learning courses produced especially for Arizona's Native American Communities: "Nation Building for Native Nations: NNI EdVenture Curriculum," and "Indian Law for Tribal Leaders: IPLP Tribal Leadership Curriculum." The project's integrated executive education curriculum will offer an online, cutting-edge, learner-centered, distance learning experience focused on developing advanced tribal leadership skills.	\$49,413

ABOR CENTRAL OFFICE
 TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
 FY 2006 ACTUAL/FY 2007 BUDGET
ARIZONA REGENTS REACH OUT (ARRO) GRANTS

<p style="text-align: center;">ASU UA NAU</p>	<p>Expansion of Gerontology Programs: Online Coursework</p>	<p>The program meets a demonstrated need in Arizona. It will increase the number of online gerontology courses statewide, and market graduate level gerontology certificates and PhD minors throughout the state. Financial incentives will be offered to faculty to move current courses into the online format, and to create new online gerontology courses. These new offerings will permit greater enrollments in all gerontology programs statewide, resulting in a workforce that is better trained and more sensitive to the needs of the largest growing group in the state – those over 65 years.</p>	<p style="text-align: center;">\$100,000</p>
<p style="text-align: center;">ASU UA NAU</p>	<p>Autism Spectrum Specialist Program</p>	<p>This multi-university collaborative and non-duplicative development creates offering of a 12-credit online graduate program of studies in Autism Spectrum Disorder (ASD) for Arizona's educators. Course content will be transferable, portable, shareable, and scalable. The proposed courses in ASD are in short supply while the number of students with ASD is growing. The project will collaborate with ASU, NAU, UA, and ADE as well as partners in Kansas, Kentucky, Ohio, and Nebraska.</p>	<p style="text-align: center;">\$99,494</p>

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APPENDIX

Arizona Board of Regents Policy 3-412

Policy Number: 3-412	Policy Name: Administration of Technology and Research Initiative Fund
Policy Revision Dates: 3/01	Page 1

3-412 Administration of Technology and Research Initiative Fund

A. Authority

As authorized by Proposition 301 approved by the voters in November 2000, the Board shall establish and administer a technology and research initiative fund (TRIF), beginning July 1, 2001. The TRIF will consist of sales tax revenues generated through Proposition 301 and other private or public sources of funding which are received by the Board for purposes which are consistent with the proposed uses described herein.

B. Funding Criteria

The TRIF will be used to support projects and initiatives that meet one or more of the following criteria:

1. Promote university research, development and technology transfer related to the knowledge based global economy;
2. Expand access to baccalaureate or post-baccalaureate education for time-bound and place-bound students;
3. Implement final recommendations from the Governor's Task Force on Higher Education and/or the Arizona Partnership for the New Economy.
4. Develop programs that will prepare students to contribute in high technology industries located in Arizona.

C. Calendar and Guidelines

The Board shall establish an annual calendar for the allocation of Proposition 301 funding, including guidelines for the submission and evaluation of proposals, and final decisions by the Board. The calendar will incorporate a process to receive and consider input from the Arizona Partnership for the New Economy (APNE) or a successor agency as may be designated by the Governor.

Policy Number: 3-412	Policy Name: Administration of Technology and Research Initiative Fund
Policy Revision Dates: 3/01	Page 2

D. Formats for Submission of Proposals

Funding requests shall be submitted by the university Presidents, or prepared by the Central Office on behalf of the Board, in a format to be approved by the Executive Director, to include the following elements: A description of the proposed need, purpose and goals for each proposed project or activity, an explanation as to the ways in which the project promotes the purposes of the legislation, and/or an explanation of the relationship of the proposed project or activity to the foundation or clusters which are part of the state's overall economic development program;

1. The requested duration of the proposed project or activity;
2. Proposed detailed performance measures, desired outcomes, and proposed methodology for evaluating progress in attaining the desired outcomes; and
3. A detailed budget for each proposed project or activity, including the identification of funds which are intended to be either continuing, multi-year, or one time only.

E. Special Factors

The Board shall take into account several additional factors in determining its allocations from this fund:

1. Priority shall be given to proposals that involve collaboration between and among the universities and/or collaboration with private industry or public sector agencies.
2. The Board may authorize awards for an annual or multi-year basis, but in no event will the Board make an award on a multi-year basis without incorporating specific requirements regarding periodic review and assessment or progress in implementing the proposed project or activity and in attaining the desired outcomes.
3. Funding may be used to pay salaries only for persons directly involved in projects or activities funded under this program that would otherwise not be funded through general fund appropriations.

Policy Number: 3-412	Policy Name: Administration of Technology and Research Initiative Fund
Policy Revision Dates: 3/01	Page 3

4. The Board may allocate up to 20% of annual funding for capital projects relating to new economy initiatives, including the payment of debt service; capital projects must be clearly identified with each university's submission of proposals.
5. The Board will honor the legislative intent as described in Proposition 301 that a portion of the revenues in the fund shall be allocated on an annual basis to pay Certificates of Participation costs for lease-purchase of buildings and associated infrastructure at ASU East and West campuses.