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



ARIZONA UNIVERSITY SYSTEM

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

**For the fiscal year ended June 30, 2002,
as required by A.R.S. §15-1648(D).**

September 1, 2002

August 30, 2002

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Linda J. Blessing, Ph.D.

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The Honorable Jane Dee Hull, Governor of Arizona
The Honorable Randall Gnant, President, Arizona State Senate
The Honorable Jim Weiers, Speaker, Arizona House of Representatives
Arizona State Capitol
1700 West Washington
Phoenix, AZ 85007

Dear Governor Hull, President Gnant, 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 the attached annual report for the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) for the fiscal year ended June 30, 2002. 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. §42-5049(E)(2).

As required, ABOR has adopted rules to administer TRIF and has incorporated these rules into Board Policy 3-412.

This annual report provides summary and detailed 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-bound 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.

Almost 70 percent of our FY 2002 TRIF budget supported tri-university initiatives in bioscience/biotechnology, information science and technology, and access and workforce development. These TRIF programs, together with individual initiatives in a variety of other areas, have been designed and implemented to better position Arizona as a major player in the global marketplace.

The Honorable Hull, Gnant, and Weiers
August 30, 2002
Page Two

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

Sincerely,

Linda J. Blessing
Executive Director

c: The Honorable Betsey Bayless, 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. Peter Likins, President, University of Arizona

Arizona Board of Regents
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF) ANNUAL REPORT

For the Fiscal Year Ended June 30, 2002

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TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF) ANNUAL REPORT

For the fiscal year ended June 30, 2002

EXECUTIVE SUMMARY

- ▶ Education 2000 (Proposition 301), passed by Arizona voters in November 2000, approved a .6 cent increase in the state sales tax to be dedicated to K-12, the community colleges, and the state's three public universities. Collection of the tax began on June 1, 2001.
- ▶ In March 2001 the Arizona Board of Regents approved a five-year budget plan for FY 2002-2006 and guidelines for implementation of the budget. In January-February 2002 the Board approved revised FY 2002 budgets and performance measures.
- ▶ 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."
- ▶ The lower range of the Board-approved FY 2002 budget was \$45,600,000. Total TRIF revenues received during FY 2002 were \$44,274,000, resulting in a revenue shortfall in FY 2002 of \$1,326,000 (2.91%). **[Note:** For purposes of this annual report, revenues consist of actual receipts into TRIF for August 2001 through June 2002 plus an estimated amount for July 2002 revenue. An estimate was required to record the June 30, 2002, year end revenue accrual and to prepare this report on a timely basis. Actual TRIF revenues for the 12-month period August 2001 through July 2002 were \$44,292,971, a shortfall of \$1,307,029 (2.87%) from the budgeted amount.]
- ▶ Total TRIF expenditures in FY 2002 were \$23,733,028, 54% of total revenue received. 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 2002. The universities were able to expend 54% of the funds by June 30, 2002, even though the start-up time required for these new initiatives has been significant and the first TRIF funds were not available until early September 2001. TRIF Budget Guidelines call for full expenditure of FY 2002 funds by December 31, 2002, and the universities and central office may then request that any unexpended funds be reallocated for the same or different use. Expenditure detail by university and by initiative is presented in this report.

- ▶ 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 are included in this report. An evaluation system for compiling information on measures and outcomes across multiple initiatives is currently under development and will be included in future annual reports.
- ▶ 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 East and ASU West.
- ▶ This report reflects compliance with the statutory 20% limitation on use of TRIF funds for capital projects expenditures. In FY 2002, 9.2% of TRIF budgeted expenditures were used for capital projects.

**ARIZONA UNIVERSITY SYSTEM
FY 2002-2006 BUDGETED/ACTUAL TRIF EXPENDITURES**

(In Millions)

		2002	2002 *	2002 Revised	2002 Actual Expend.	2003	2003 *	2004	2004 *	2005	2005 *	2006	2006 *
ASU	• ASU East	\$1.4	\$1.4	\$1.4	\$0.0	\$2.0	\$2.0	\$2.3	\$2.3	\$2.3	\$2.3	\$2.3	\$2.3
	• ASU West	\$1.1	\$1.1	\$1.1	\$0.0	\$1.6	\$1.6	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8
	• Access/Workforce	\$2.2	\$2.6	\$2.2	\$1.1	\$2.2	\$2.6	\$2.2	\$2.6	\$2.2	\$3.0	\$2.2	\$3.0
	• Technology Transfer	\$0.5	\$0.6	\$0.5	\$0.3	\$0.5	\$0.6	\$0.5	\$0.6	\$0.5	\$0.8	\$0.5	\$0.8
	• R&D Total	\$13.0	\$16.3	\$12.9	\$6.2	\$12.8	\$16.2	\$13.1	\$16.5	\$14.1	\$17.2	\$15.4	\$18.3
	<i>Biotechnology</i>	\$7.0	\$9.0	\$6.9	\$3.4	\$6.8	\$8.9	\$7.1	\$9.0	\$5.3	\$5.7	\$5.7	\$5.7
	<i>Information Technology</i>	\$4.0	\$4.8	\$4.0	\$1.5	\$4.0	\$4.8	\$4.0	\$4.8	\$3.0	\$3.8	\$3.1	\$3.8
	<i>Manufacturing</i>	\$0.5	\$0.7	\$0.5	\$0.1	\$0.5	\$0.7	\$0.5	\$0.7	\$0.8	\$1.7	\$1.2	\$2.3
	<i>Materials</i>	\$1.5	\$1.8	\$1.5	\$1.2	\$1.5	\$1.8	\$1.5	\$2.0	\$5.0	\$6.0	\$5.4	\$6.5
	• Assessment	\$0.0	\$0.0	\$0.1	\$0.1								
ASU Subtotal	\$18.2	\$22.0	\$18.2	\$7.7	\$19.1	\$23.0	\$19.9	\$23.8	\$20.9	\$25.1	\$22.2	\$26.2	
NAU	• Access/Workforce	\$3.9	\$4.8	\$3.9	\$2.1	\$4.0	\$4.8	\$3.0	\$3.6	\$2.0	\$2.4	\$2.0	\$2.4
	• R&D total	\$4.2	\$4.9	\$4.2	\$2.7	\$4.5	\$5.4	\$5.9	\$7.1	\$7.4	\$8.8	\$7.8	\$9.4
	<i>Biotechnology</i>	\$1.1	\$1.3	\$1.0	\$0.6	\$1.4	\$1.7	\$1.8	\$2.2	\$2.1	\$2.5	\$2.2	\$2.7
	<i>Information Tech/E-Learning</i>	\$1.4	\$1.8	\$1.4	\$0.7	\$1.5	\$1.9	\$1.8	\$2.1	\$2.3	\$2.7	\$2.3	\$2.8
	<i>Environment</i>	\$1.7	\$1.8	\$1.5	\$1.3	\$1.6	\$1.9	\$2.3	\$2.8	\$3.0	\$3.6	\$3.3	\$4.0
	<i>Capital Projects</i>	\$0.0	\$0.0	\$0.3	\$0.1								
NAU Subtotal	\$8.1	\$9.7	\$8.1	\$4.8	\$8.5	\$10.2	\$8.9	\$10.7	\$9.4	\$11.2	\$9.8	\$11.8	
UA	• Access/Workforce	\$1.8	\$1.8	\$1.8	\$0.7	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8
	• Technology Transfer	\$0.5	\$0.5	\$0.5	\$0.4	\$0.6	\$0.6	\$0.7	\$0.7	\$0.8	\$0.8	\$0.8	\$0.8
	• R&D total	\$14.0	\$17.8	\$14.0	\$8.1	\$14.8	\$18.7	\$15.6	\$19.7	\$16.6	\$20.7	\$17.6	\$21.8
	<i>Biotechnology</i>	\$5.0	\$6.3	\$5.0	\$2.9	\$5.0	\$6.5	\$5.0	\$6.5	\$6.0	\$7.0	\$5.5	\$6.5
	<i>Information Technology</i>	\$4.0	\$5.3	\$4.0	\$2.2	\$4.3	\$5.8	\$4.2	\$5.8	\$4.1	\$6.1	\$4.4	\$6.7
	<i>Optics</i>	\$4.5	\$5.7	\$4.5	\$2.8	\$5.0	\$5.9	\$4.5	\$4.9	\$4.2	\$4.6	\$4.2	\$4.6
<i>Water</i>	\$0.5	\$0.5	\$0.5	\$0.2	\$0.5	\$0.5	\$2.0	\$2.5	\$2.3	\$3.0	\$3.5	\$4.0	
UA Subtotal	\$16.3	\$20.1	\$16.3	\$9.2	\$17.2	\$21.1	\$18.1	\$22.2	\$19.1	\$23.2	\$20.2	\$24.4	
ABOR	• ARU	\$2.0	\$2.0	\$2.0	\$1.4	\$2.1	\$2.1	\$2.2	\$2.2	\$2.3	\$2.3	\$2.4	\$2.4
	• Regents Innovation Fund	\$1.0	\$1.0	\$1.0	\$0.6	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0
	ABOR Subtotal	\$3.0	\$3.0	\$3.0	\$2.0	\$3.1	\$3.1	\$3.2	\$3.2	\$3.3	\$3.3	\$3.4	\$3.4
AUS	• ARU	\$2.0	\$2.0	\$2.0	\$1.4	\$2.1	\$2.1	\$2.2	\$2.2	\$2.3	\$2.3	\$2.4	\$2.4
	• Regents Innovation Fund	\$1.0	\$1.0	\$1.0	\$0.6	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0
	• ASU East	\$1.4	\$1.4	\$1.4	\$0.0	\$2.0	\$2.0	\$2.3	\$2.3	\$2.3	\$2.3	\$2.3	\$2.3
	• ASU West	\$1.1	\$1.1	\$1.1	\$0.0	\$1.6	\$1.6	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8	\$1.8
	• Access/Workforce**	\$7.9	\$9.2	\$7.9	\$3.9	\$8.0	\$9.2	\$7.0	\$8.0	\$6.0	\$7.2	\$6.0	\$7.2
	• Technology Transfer	\$1.0	\$1.1	\$1.0	\$0.7	\$1.1	\$1.2	\$1.2	\$1.3	\$1.3	\$1.5	\$1.3	\$1.5
	• R&D Total	\$31.2	\$39.0	\$31.1	\$17.0	\$32.1	\$40.3	\$34.7	\$43.3	\$38.0	\$46.7	\$40.8	\$49.5
	<i>Biotechnology**</i>	\$13.1	\$16.6	\$12.9	\$6.9	\$13.2	\$17.1	\$13.9	\$17.7	\$13.4	\$15.2	\$13.4	\$14.9
	<i>Information Technology**</i>	\$9.4	\$11.9	\$9.4	\$4.4	\$9.8	\$12.4	\$10.0	\$12.7	\$9.4	\$12.6	\$9.8	\$13.3
	<i>Materials</i>	\$1.5	\$1.8	\$1.5	\$1.2	\$1.5	\$1.8	\$1.5	\$2.0	\$5.0	\$6.0	\$5.4	\$6.5
	<i>Manufacturing</i>	\$0.5	\$0.7	\$0.5	\$0.1	\$0.5	\$0.7	\$0.5	\$0.7	\$0.8	\$1.7	\$1.2	\$2.3
	<i>Environment</i>	\$1.7	\$1.8	\$1.5	\$1.3	\$1.6	\$1.9	\$2.3	\$2.8	\$3.0	\$3.6	\$3.3	\$4.0
	<i>Optics</i>	\$4.5	\$5.7	\$4.5	\$2.8	\$5.0	\$5.9	\$4.5	\$4.9	\$4.2	\$4.6	\$4.2	\$4.6
	<i>Water</i>	\$0.5	\$0.5	\$0.5	\$0.2	\$0.5	\$0.5	\$2.0	\$2.5	\$2.3	\$3.0	\$3.5	\$4.0
<i>Capital Projects</i>	\$0.0	\$0.0	\$0.3	\$0.1									
• ASU Assessment	\$0.0	\$0.0	\$0.1	\$0.1									
Arizona University System Total		\$45.6	\$54.8	\$45.6	\$23.7	\$47.9	\$57.4	\$50.2	\$60.0	\$52.7	\$62.8	\$55.6	\$65.7

* Reflects an institutional total of approximately 120% of LOWER ESTIMATE tax revenues (with JLBC estimate midway between the upper and lower levels).

** Reflects tri-university budget initiatives (Access and Workforce Development, Biosciences/Biotechnology, and Information Science/Information Technology).

ARIZONA UNIVERSITY SYSTEM
FY 2002-2006 BUDGETED/ACTUAL TRIF CAPITAL EXPENDITURES
(In Thousands)

		2002	2002 Revised	2002 Actual Expend.	2003	2004	2005	2006
ASU	• ASU East/West*	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	• Access/Workforce	\$400	\$650	\$0	\$400	\$400	\$400	\$400
	• Technology Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	• R&D Total	\$1,850	\$2,263	\$2,702	\$1,500	\$1,000	\$1,000	\$1,000
	<i>Biotechnology</i>	\$1,500	\$2,063	\$2,702	\$1,000	\$500	\$500	\$500
	<i>Information Technology</i>	\$350	\$200	\$0	\$500	\$500	\$500	\$500
	<i>Materials</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Manufacturing</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	• Assessment	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Capital	\$2,250	\$2,913	\$2,702	\$1,900	\$1,400	\$1,400	\$1,400
Capital as % of Total ASU Budget	14.3%	18.6%	17.2%	12.3%	8.9%	8.3%	7.7%	
NAU	• Access/Workforce	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	• R&D Total	\$300	\$0	\$0	\$0	\$1,860	\$2,240	\$2,350
	<i>Biotechnology</i>	\$100	\$0	\$0	\$0	\$1,000	\$1,300	\$1,410
	<i>Information Technology/E-Learning</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Environment</i>	\$200	\$0	\$0	\$0	\$860	\$940	\$940
	<i>Capital Projects</i>	\$0	\$0	\$0				
	Total Capital	\$300	\$0	\$0	\$0	\$1,860	\$2,240	\$2,350
Capital as % of Total NAU Budget	3.7%	0.0%	0.0%	0.0%	20.9%	23.8%	24.0%	
UA	• Access/Workforce	\$470	\$0	\$0	\$0	\$0	\$0	\$0
	• Technology Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	• R&D Total	\$1,000	\$1,100	\$1,260	\$1,000	\$3,000	\$3,000	\$3,000
	<i>Biotechnology</i>	\$0	\$100	\$260	\$0	\$2,000	\$2,000	\$2,000
	<i>Information Technology</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Optics</i>	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
	<i>Water</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Capital	\$1,470	\$1,100	\$1,260	\$1,000	\$3,000	\$3,000	\$3,000	
Capital as % of Total UA Budget	9.0%	6.7%	7.7%	5.8%	16.6%	15.7%	14.9%	
ABOR	• ARU	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	• Regents Innovation Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Capital	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Capital as % of Total ABOR Budget	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AUS	• Access/Workforce**	\$870	\$650	\$0	\$400	\$400	\$400	\$400
	• Technology Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	• R&D Total	\$3,150	\$3,363	\$3,962	\$2,500	\$5,860	\$6,240	\$6,350
	<i>Biotechnology**</i>	\$1,600	\$2,163	\$2,962	\$1,000	\$3,500	\$3,800	\$3,910
	<i>Information Technology**</i>	\$350	\$200	\$0	\$500	\$500	\$500	\$500
	<i>Materials</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Manufacturing</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Environment</i>	\$200	\$0	\$0	\$0	\$860	\$940	\$940
	<i>Optics</i>	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
	<i>Water</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Capital Projects</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
• ASU Assessment	\$0	\$0	\$0					
Total Arizona University System Capital		\$4,020	\$4,013	\$3,962	\$2,900	\$6,260	\$6,640	\$6,750
20% Limit on Capital		\$8,620	\$8,620	\$8,620	\$8,860	\$9,220	\$9,720	\$10,300
Capital as % of Total AUS Budget		9.3%	9.3%	9.2%	6.5%	13.6%	13.7%	13.1%

* Not applicable. TRIF allocations for ASU East and ASU West debt service are allocated by statute. Therefore, these amounts are excluded from calculation of the 20% capital limitation.

** Reflects tri-university budget initiatives (Access and Workforce Development, Biosciences/Biotechnology, and Information Science/Information Technology).

ARIZONA STATE UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
SUMMARY

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 18,200,000	\$ 17,717,000	\$ 19,100,000	\$ 20,000,000	\$ 21,000,000	\$ 22,300,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 3,134,000	\$ 1,492,100	\$ 7,277,800	\$ 8,821,400	\$ 9,342,100	\$ 10,413,100
ERE	658,800	221,700	1,346,400	1,631,900	1,728,200	1,926,400
All Other Operating	8,993,900	3,307,300	4,975,800	4,046,700	4,429,700	4,460,500
TOTAL OPERATING BUDGET	12,786,700	5,021,100	13,600,000	14,500,000	15,500,000	16,800,000
CAPITAL BUDGET						
Building Renovation	2,913,300	2,701,500	1,400,000	400,000	400,000	400,000
Debt Service	-	-	500,000	1,000,000	1,000,000	1,000,000
COPs Lease Purchase Payment	2,500,000	-	3,600,000	4,100,000	4,100,000	4,100,000
TOTAL CAPITAL BUDGET	5,413,300	2,701,500	5,500,000	5,500,000	5,500,000	5,500,000
EXPENDITURES GRAND TOTAL	\$ 18,200,000	\$ 7,722,600	\$ 19,100,000	\$ 20,000,000	\$ 21,000,000	\$ 22,300,000
Note: FY 2002 expenditures include encumbrances at 6/30/02.						
SUMMARY BY INITIATIVE						
ARIZONA STATE UNIVERSITY MAIN						
Access and Workforce Development	\$ 2,200,000	\$ 1,050,200	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000
Biosciences/Biotechnology	6,876,400	3,406,400	6,781,400	7,097,100	5,312,300	5,728,200
Information Science	4,031,500	1,487,600	3,979,300	4,009,100	3,033,400	3,149,100
Manufacturing	479,200	133,200	500,400	522,800	813,600	1,210,000
Advanced Materials for the New Economy	1,512,900	1,242,300	1,538,900	1,571,000	5,040,700	5,412,700
Technology Transfer	500,000	335,700	500,000	500,000	500,000	500,000
Assessment - Morrison Institute	100,000	67,200	-	-	-	-
Subtotal ASU Main	15,700,000	7,722,600	15,500,000	15,900,000	16,900,000	18,200,000
ARIZONA STATE UNIVERSITY EAST	1,400,000	-	2,000,000	2,300,000	2,300,000	2,300,000
ARIZONA STATE UNIVERSITY WEST	1,100,000	-	1,600,000	1,800,000	1,800,000	1,800,000
EXPENDITURES GRAND TOTAL	\$ 18,200,000	\$ 7,722,600	\$ 19,100,000	\$ 20,000,000	\$ 21,000,000	\$ 22,300,000

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
SUMMARY

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 8,100,000	\$ 7,850,833	\$ 8,500,000	\$ 8,920,000	\$ 9,350,000	\$ 9,810,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 3,497,879	\$ 3,040,122	\$ 3,767,256	\$ 3,031,290	\$ 3,709,328	\$ 3,881,937
ERE	681,644	622,243	734,569	591,052	720,382	747,549
All Other Operating	3,920,477	1,078,796	3,998,175	3,497,658	2,680,290	2,830,514
TOTAL OPERATING BUDGET	8,100,000	4,741,161	8,500,000	7,120,000	7,110,000	7,460,000
CAPITAL BUDGET						
Building Renovation						
Debt Service			-	1,800,000	2,240,000	2,350,000 #
TOTAL CAPITAL BUDGET	-	-	-	1,800,000	2,240,000	2,350,000 #
EXPENDITURES GRAND TOTAL	\$ 8,100,000	\$ 4,741,161	\$ 8,500,000	\$ 8,920,000	\$ 9,350,000	\$ 9,810,000 #
SUMMARY BY INITIATIVE						
Biosciences/Biotechnology	\$ 1,000,000	\$ 603,786	\$ 1,400,000	\$ 1,800,000	\$ 2,100,000	\$ 2,210,000
E-Learning	1,400,000	679,662	1,540,000	1,780,000	2,250,000	2,300,000
Access and Workforce Development	3,900,000	2,091,294	4,000,000	3,000,000	2,000,000	2,000,000
ERDENE (Environmental)	1,500,000	1,274,960	1,560,000	2,340,000	3,000,000	3,300,000
Capital Projects	300,000	91,459				
EXPENDITURES GRAND TOTAL	\$ 8,100,000	\$ 4,741,161	\$ 8,500,000	\$ 8,920,000	\$ 9,350,000	\$ 9,810,000

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
SUMMARY

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 16,300,000	\$ 15,798,588	\$ 17,200,000	\$ 18,200,000	\$ 19,200,000	\$ 20,200,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 5,834,752	\$ 2,416,578	\$ 7,938,200	\$ 7,464,325	\$ 7,264,603	\$ 6,904,337
ERE	1,137,774	388,641	1,547,962	1,455,600	1,416,500	1,346,400
All Other Operating	8,227,474	5,155,203	6,713,838	6,280,075	7,518,897	8,949,263
TOTAL OPERATING BUDGET	15,200,000	7,960,422	16,200,000	15,200,000	16,200,000	17,200,000
CAPITAL BUDGET						
Building Renovation	100,000	260,000				
Debt Service	1,000,000	1,000,000	1,000,000	3,000,000	3,000,000	3,000,000
TOTAL CAPITAL BUDGET	1,100,000	1,260,000	1,000,000	3,000,000	3,000,000	3,000,000
EXPENDITURES GRAND TOTAL	\$ 16,300,000	\$ 9,220,422	\$ 17,200,000	\$ 18,200,000	\$ 19,200,000	\$ 20,200,000
SUMMARY BY INITIATIVE						
UNIVERSITY OF ARIZONA						
Access to Higher Education	\$ 1,000,000	\$ 35,981	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Workforce: Teacher Preparation	800,000	618,281	800,000	800,000	800,000	800,000
Technology Transfer Infrastructure	500,000	355,732	600,000	700,000	800,000	800,000
Biomedical Science & Biotechnology	5,000,000	2,937,259	5,000,000	5,000,000	6,000,000	5,500,000
Internet Technology & Commerce Institute	4,000,000	2,233,855	4,300,000	4,200,000	4,100,000	4,400,000
Optical Science & Technology	4,500,000	2,847,913	5,000,000	4,500,000	4,200,000	4,200,000
Water Technology	500,000	191,401	500,000	2,000,000	2,300,000	3,500,000
EXPENDITURES GRAND TOTAL	\$ 16,300,000	\$ 9,220,422	\$ 17,200,000	\$ 18,200,000	\$ 19,200,000	\$ 20,200,000

ARIZONA BOARD OF REGENTS CENTRAL OFFICE
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
SUMMARY

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 3,000,000	\$ 2,907,717	\$ 3,100,000	\$ 3,205,000	\$ 3,315,000	\$ 3,431,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 78,333	\$ 62,211	\$ 165,200	\$ 215,504	\$ 215,814	\$ 236,130
ERE	19,749	12,460	41,300	53,876	53,953	59,032
All Other Operating	2,901,918	1,974,174	2,893,500	2,935,620	3,045,233	3,135,838
TOTAL OPERATING BUDGET	3,000,000	2,048,845	3,100,000	3,205,000	3,315,000	3,431,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 3,000,000	\$ 2,048,845	\$ 3,100,000	\$ 3,205,000	\$ 3,315,000	\$ 3,431,000
SUMMARY BY INITIATIVE						
Arizona Regents University	2,000,000	1,475,412	2,100,000	2,205,000	2,315,000	2,431,000
Regents Innovation Fund	1,000,000	573,433	1,000,000	1,000,000	1,000,000	1,000,000
EXPENDITURES GRAND TOTAL	\$ 3,000,000	\$ 2,048,845	\$ 3,100,000	\$ 3,205,000	\$ 3,315,000	\$ 3,431,000

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
BIOSCIENCES/BIO TECHNOLOGY

	FY 2002 REV BUDGET	FY 2002 ACTUAL	FY 2003 BUDGET	FY 2004 BUDGET	FY 2005 BUDGET	FY 2006 BUDGET
REVENUE	\$ 6,876,400	\$ 6,661,800	\$ 6,781,400	\$ 7,097,100	\$ 5,312,300	\$ 5,728,200
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 516,900	\$ 306,700	\$ 2,642,500	\$ 3,374,600	\$ 3,643,300	\$ 3,825,500
ERE	110,600	50,300	488,900	624,300	674,000	707,700
All Other Operating	4,185,600	347,900	2,650,000	2,598,200	495,000	695,000
TOTAL OPERATING BUDGET	4,813,100	704,900	5,781,400	6,597,100	4,812,300	5,228,200
CAPITAL BUDGET						
Building Renovation	2,063,300	2,701,500	1,000,000	-	-	-
Debt Service	-	-	-	500,000	500,000	500,000
TOTAL CAPITAL BUDGET	2,063,300	2,701,500	1,000,000	500,000	500,000	500,000
EXPENDITURES GRAND TOTAL	\$ 6,876,400	\$ 3,406,400	\$ 6,781,400	\$ 7,097,100	\$ 5,312,300	\$ 5,728,200

Note: FY 2002 expenditures include encumbrances at 6/30/02.

INITIATIVE OVERVIEW

The formation of the Arizona Biomedical Institute (AzBio) is the centerpiece of the ASU Proposition 301 initiative in biosciences/biotechnology. The vision for AzBio focuses on developing the Institute into a benchmark for excellence in integrative biomedical research. We will reach this status through innovative cross-collaborations between multiple university disciplines and effective partnerships with clinicians and researchers in the health care community and related industries. By 2015, AzBio will become a world-class research enterprise as an integral part of the development of a globally competitive biosciences cluster in the Phoenix metropolitan area.

AzBio will connect basic research with translational research, integrating the learning from "bench top to bedside" to develop a comprehensive understanding of human health. The AzBio efforts are outcome oriented, seeking to translate learning into interventions that enhance individual wellness and quality of life, along with promoting public health policies relating to the welfare of the general population. AzBio focuses on five thematic areas: Medical Bioengineering; Pharmaceuticals and Nutraceuticals; Stress and Disease Prevention; Genomics and Genetic Medicine; and Health Policy and Public Health. These multidisciplinary research areas provide AzBio with a robust capacity to address issues of health, technology development, economic competitiveness, and quality of life. Coupled with existing ASU strengths in the basic biological sciences, engineering and applied sciences, and information and computer technologies, the Institute will provide strategic collaborative opportunities for the surrounding regional and national clinical research community. In addition, we will work to leverage the proximity of The Translational Genomics Research Institute (TTGRI) to advance programs in genetics research, genetics-based medicine, and cancer research.

FY 2002 GOALS/OBJECTIVES

The primary near-term AzBio goals are to advance breakthroughs in biomedicine and strengthen the Arizona bio industry. The key strategic objectives to accomplish these are:

- Target high priority biomedical specialties that hold significant promise for future development.
- Extend the ASU core competitiveness in the areas of life sciences and bioengineering to:
 - Focus research thrusts in strategic areas that foster long-term collaborative projects in current and emerging priority areas identified by the National Institutes of Health (NIH), National Science Foundation (NSF), and other federal agencies and potential industrial partners.
 - Combine integrative, multidisciplinary bench top to bedside research efforts between departments and colleges at ASU and the outside medical community through seed grants and matching funds opportunities.
 - Establish and strengthen partnerships with institutions in the Phoenix area involved in clinical medicine and the bio industry through shared use facilities and joint faculty appointments.
 - Develop state-of-the-art laboratory facilities by acquiring and/or building new equipment and multidisciplinary core facilities.
 - Develop technology transfer strategies for all major biosciences/biotechnology programs, identifying intellectual property opportunities and proactively marketing technology innovations.
 - Recruit and hire new, high caliber faculty in the strategic areas targeted by AzBio.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
BIOSCIENCES/BIOTECHNOLOGY

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REVISED EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003 PROJECTED</i>	<i>FY 2004 PROJECTED</i>	<i>FY 2005 PROJECTED</i>	<i>FY 2006 PROJECTED</i>
Return on Investment						
1. Total external funding: new awards	\$5.0M	\$4.7M	\$8.0M	\$10.0M	\$12.0M	\$15.0M
2. External funding: new federal awards	\$4.0M	\$4.0M	\$6.0M	\$8.0M	\$9.0M	\$11.0M
3. External funding: new industrial contracts and donations	\$1.0M	\$0.66M	\$2.0M	\$2.0M	\$3.0M	\$4.0M
Technology Transfer						
4. Invention disclosures ^(a)						
5. Patent applications ^(a)						
6. Patents ^(a)						
7. Startup companies/licenses ^(a)						
Workforce Contributions						
8. Graduate/postdoc students in pipeline	20	16	30	30	30	30
9. Graduate/postdoc students earning degrees and entering workforce			15	15	15	15
10. Undergraduate students with research experience	20	11	40	40	40	40
Partnerships						
11. New research collaborations with institutions/industry	5	6	5	5	5	5

^(a) The individual measures for invention disclosures, patent applications, patents, and startup companies are aggregated for the Biosciences/Biotechnology, Information Science, Manufacturing, and Materials initiatives and reported in the Technology Transfer initiative.

FY 2002 RESULTS AND ACCOMPLISHMENTS

In FY 2002, a major AzBio effort encouraged further development in the number and quality of research proposals, particularly those involving partnerships with outside institutions and industries. In measuring our progress in this area, the FY 2001 versus FY 2002 value of grant proposals submitted in the biosciences increased from \$50,000,000 in FY 2001 to \$78,000,000 in FY 2002. More multi-investigator grants were submitted for program projects and joint collaborations between ASU faculty and clinical scientists in the community. We expect this trend to continue to increase as we see the impact of the seed grant program and core laboratory development programs.

Other key accomplishments in FY 2002 include:

- Initiated programming for new biomedical research building and recruiting of potential partner occupants including the Veterans Administration (VA) and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).
- Successfully developed a consortium platform that facilitated the location of TTGRI to Phoenix. AzBio has committed ongoing program support plus four faculty positions in the genomics area to the TTGRI effort.
- Developed partnerships and research collaborations with medical institutions and companies including: Mayo, Sun Health, VA, NIDDK, Barrow Neurological Institute, Scottsdale Healthcare, Banner Health, Arizona Health Sciences Dental School, Advanced Bionics, Medtronic, CreaAgri, and Intel.
- Provided funding for 15 seed grant proposals for interdisciplinary and translational research projects to foster collaborations between ASU and clinical scientists at the medical institutions in the greater Phoenix metropolitan area. These seed grant activities provided the pilot data for responses to large agency requests for awards.
- Recruited and hired three new faculty in two targeted AzBio areas, Nutraceuticals and Pharmaceuticals, and Bioengineering. Additional recruiting efforts will continue to target existing faculty strengths and program development.
- Hosted five interdisciplinary research workshops on Neuroscience, Environment and Ecology of Human and Animal Populations, Musculoskeletal Disease, Immunology, and the Future of Stress Research. Fifty to sixty scientists attended each workshop, with participation from local medical institutions and biomedical industries.
- Sponsored a Women's Health Research Forum that included an address by Wanda Jones, Assistant Deputy Secretary of Health, US Department of Health and Human Services, and presentations by local medical institutions and ASU researchers to encourage development of new collaborative research projects and partnerships with the medical community.
- Expanded core ASU laboratory facilities used by clinical faculty to enhance the breadth and depth of research projects. In particular, we enhanced the development of the Health Assessment Core Facility with the purchase of a Dual Energy X-ray Absorptiometer (DEXA) scanner for measurement of bone density and body composition. Additionally, we received donations of core laboratory equipment from the local medical community and local businesses. These additions to our core facility will expand our technical capabilities, decrease overall research costs, and enhance our ability to secure program projects from NIH and other project sponsors.
- Developed new grants that combine collaborations between the focus areas of AzBio and other Proposition 301 initiatives, including Information Science and Advanced Materials for the New Economy. These new type of grant opportunities have created an environment for transdisciplinary and translational research that provides a unique platform for innovative and challenging efforts by ASU faculty and the biosciences/biotechnology community.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
BIOTECHNOLOGY

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 1,000,000	\$ 969,239	\$ 1,400,000	\$ 1,800,000	\$ 2,100,000	\$ 2,210,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 298,000	\$ 188,168	\$ 472,900	\$ 496,500	\$ 434,000	\$ 455,700
ERE	58,100	28,234	92,200	96,800	84,600	88,900
All Other Operating	643,900	387,384	834,900	206,700	281,400	255,400
TOTAL OPERATING BUDGET	1,000,000	603,786	1,400,000	800,000	800,000	800,000
CAPITAL BUDGET						
Building Renovation						
Debt Service				1,000,000	1,300,000	1,410,000
TOTAL CAPITAL BUDGET	-	-	-	1,000,000	1,300,000	1,410,000
EXPENDITURES GRAND TOTAL	\$ 1,000,000	\$ 603,786	\$ 1,400,000	\$ 1,800,000	\$ 2,100,000	\$ 2,210,000

INITIATIVE OVERVIEW

Consistent with the principles of *Arizona at Risk*, this initiative focuses on projects in the field of bioscience and biotechnology which can:

1. Enhance the reputation of Flagstaff and Arizona as a center of quality bioscience/biochemistry research
2. Stimulate technology transfer to better position Arizona in the fields of bioscience and biotechnology
3. Expand and enrich the Arizona workforce trained in the high-tech aspects of biotechnology

FY 2002 GOALS/OBJECTIVES

1. Organize and staff new projects
2. Focus on new grant applications to leverage Prop 301 dollars
3. Provide technical education to students through involvement in lab activities and advanced-content classes

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
BIOTECHNOLOGY

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REV EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Return on Investment						
1. Increased external funding	\$1,386,000	\$1,400,000	\$1,500,000	\$2,000,000	\$2,000,000	\$3,500,000
2. Increased number of scholarly publications	7	12	15	18	20	20
Technology Transfer						
3. Patents applied for	2	1 (3 more IP)	1	1	1	1
4. Products generated and in the marketplace			1	1	1	1
5. Business expansions			2	2	2	2
6. Tech transfer: startup companies created						
Economic Development						
7. Incubation/formation of biotech concerns in Flagstaff/Northern Arizona			1	1	2	2
Workforce Contributions						
8. Graduate/post-doc students in pipeline	57	60	60	60	60	60
9. Undergraduate students with research experience	76	80	80	80	80	80
10. M.S./PhD graduate increases	2	1	3	3	3	4
11. Research/training for post-doctoral Fellows	2	10	10	10	10	10
Specific Collaborations						
12. New research collaborations	4	6	6	6	8	8

FY 2002 RESULTS AND ACCOMPLISHMENTS

Results from this initiative have leveraged Proposition 301 dollars, allowed progress in areas which will result in patentable outcomes, and provided workforce training in high-tech biotechnology skills and techniques. This project, like others, was somewhat hampered by the time involved in start-up. All projects are currently staffed and moving forward on their various research agendas.

One of the most innovative features of this project has been the awarding of "mini-grants" to provide seed funds to a variety of activities, some of which will mature into full-blown research projects.

Outcomes:

1. A patented microsensor to detect environmental pollutants and chemical warfare agents. The developer is working with the Northern Arizona Technology and Business Incubator and College of Business Administration staff and students to create a business plan and consider the possibility of forming a Limited-Liability Corporation for marketing this item.
2. 301 dollars have been used as matching contributions in ways that have allowed project scientists to bring in over \$1.4 million in additional funding during this year.
3. Three additional patent applications are in progress.
4. Partnerships have been developed with Diatide, Inc. of New Hampshire, the Corneal Science Corporation, Cleveland Clinic Foundation, Ridgeway Biosystems in Cleveland, OH, and with the National Institutes of Health in Bethesda, Maryland.
5. Four of the 10 minigrants involve partnerships with ASU and UofA.
6. One of the 301 project recipients, Dr. Paul Keim, has been instrumental in attracting the International Genomics Consortium and Translational Genomics Research Institute to Arizona.
7. Over 45 undergraduate, 25 graduate, and 10 post-doctoral students have been members of the research labs of 301 project participants.
8. 25 students received advanced education in biotechnology subjects through the Molecular Techniques and Molecular Biology courses supported or enhanced by 301 dollars.
9. Signed a license option agreement with Eccentron, LLC to commercialize eccentric ergometer technology.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
INSTITUTE FOR BIOMEDICAL SCIENCE & BIOTECHNOLOGY

	<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
	<i>REV BUDGET</i>	<i>ACTUAL</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>
REVENUE	\$ 5,000,000	\$ 4,846,193	\$ 5,000,000	\$ 3,000,000	\$ 4,000,000	\$ 3,500,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 1,815,000	\$ 518,152	\$ 2,742,000	\$ 1,861,225	\$ 1,950,483	\$ 1,890,010
ERE	353,900	101,948	534,690	362,939	380,344	368,552
All Other Operating	2,731,100	2,057,159	1,723,310	775,836	1,669,173	1,241,438
TOTAL OPERATING BUDGET	4,900,000	2,677,259	5,000,000	3,000,000	4,000,000	3,500,000
CAPITAL BUDGET						
Building Renovation	100,000	260,000				
Debt Service	-			2,000,000	2,000,000	2,000,000
TOTAL CAPITAL BUDGET	100,000	260,000	-	2,000,000	2,000,000	2,000,000
EXPENDITURES GRAND TOTAL	\$ 5,000,000	\$ 2,937,259	\$ 5,000,000	\$ 5,000,000	\$ 6,000,000	\$ 5,500,000

INITIATIVE OVERVIEW

The Institute for Biomedical Science and Biotechnology will play a significant role in Arizona's economic development plans. The University of Arizona is home to a wealth of world class life sciences research programs that can be leveraged to generate a powerful engine for development of life sciences-related industry, or bioindustry, in Arizona.

This initiative begins with existing faculty research resources in molecular medicine, molecular agriculture and instrumentation and methodologies. It builds on these strengths by attracting new, senior research faculty and by assembling state-of-the-art facilities to support that research work. The initiative strengthens educational programs and infrastructure at K-12, undergraduate, and graduate levels as a critical component of workforce development.

The IBSB initiative seeks industrial partnerships and encourages and facilitates technology transfer and business incubator facilities to accommodate start-up companies.

FY 2002 GOALS/OBJECTIVES

- To be awarded \$2,000,000 in grants.
- To recruit 5 world-class scientists into strategically defined areas.
- To increase number of bio start-up companies by 2.
- To increase the number of invention disclosures attributable to bio by 2-4.
- To increase the number of technology transfer workshops performed by 3-4.
- To increase growth in life science postdocs in pipeline by 10.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
INSTITUTE FOR BIOMEDICAL SCIENCE & BIOTECHNOLOGY

PERFORMANCE MEASURES/DELIVERABLES

	<i>FY 2002 REV EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Return on Investment						
1. New research funding	\$ 2,000,000	\$ 1,447,470				
Technology Transfer						
2. New software packages distributed	N/A	0				
3. Hits per month on research websites	N/A	0				
4. Invention disclosures ^(a)	2-4	0				
5. Patent applications ^(a)	N/A	1				
6. Patents ^(a)	N/A	0				
7. Startup companies ^(a)	2	2				
Economic Development						
8. Companies identifying UA as a factor for relocating or expanding in AZ	2-3	2				
Workforce Contributions						
9. Graduates (all levels)	546	504				
10. Minority enrollment growth	637	637 (0%)				
Curriculum Innovations						
11. High school students involved in program	N/A	N/A				
12. New courses introduced	N/A	N/A				
13. Internships (industry or Software Factory)	N/A	N/A				

^(a) The individual measures for invention disclosures, patent applications, patents, and startup companies are aggregated for the Biosciences/Biotechnology, Information Science, Manufacturing, and Materials initiatives and reported in the Technology Transfer initiative.

FY 2002 RESULTS AND ACCOMPLISHMENTS

- IBSB was funded \$1,447,470 in new grants in FY 2002 and has \$19,106,683 awaiting funding.
- IBSB recruited 7 world-class scientists (Wing, Soderlund, Hogan, Wysocki, Osterhout, Machado, and Aspinwall) into strategically defined areas.
- Two new bio startup companies were started in FY 2002. (AzTex and a company by Bob Gillies and Victor Hruby)
- IBSB supported 3 technology transfer workshops in FY 2002.
- IBSB is actively supporting graduate students and anticipates that this will result in an increase in postdocs in the pipeline soon.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
INFORMATION SCIENCE

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 4,031,500	\$ 3,907,500	\$ 3,979,300	\$ 4,009,100	\$ 3,033,400	\$ 3,149,100
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 1,650,000	\$ 342,500	\$ 2,268,600	\$ 2,767,200	\$ 2,002,900	\$ 2,100,500
ERE	330,000	42,300	419,700	511,900	370,500	388,600
All Other Operating	1,851,500	1,102,800	791,000	230,000	160,000	160,000
TOTAL OPERATING BUDGET	3,831,500	1,487,600	3,479,300	3,509,100	2,533,400	2,649,100
CAPITAL BUDGET						
Building Renovation	200,000					
Debt Service			500,000	500,000	500,000	500,000
TOTAL CAPITAL BUDGET	200,000	-	500,000	500,000	500,000	500,000
EXPENDITURES GRAND TOTAL	\$ 4,031,500	\$ 1,487,600	\$ 3,979,300	\$ 4,009,100	\$ 3,033,400	\$ 3,149,100

Note: FY 2002 expenditures include encumbrances at 6/30/02.

INITIATIVE OVERVIEW

The Information Science Initiative is an integral part of the ASU vision of becoming internationally recognized for collaborative research with industry and government agencies. The focus of the initiative is to develop highly integrated, multidisciplinary research and education activities that deepen fundamental knowledge in information technology and emphasize the innovative nature an application to other disciplines.

The initiative activities include:

- Basic research in computing technologies that stimulates formation of new companies, attracts new industries, and retains/expands established companies.
- Focusing on embedded and networked systems, knowledge systems, wireless technologies, multimedia, and distributed systems.
- Applied interdisciplinary research -- Faculty performing research in information sciences also work with faculty in other disciplines that benefit from application of that research to broaden the economic impact and diversification of the results. Examples include biotechnology, e-commerce, geographic information systems, and genomics computing.
- Workforce development -- Increase the number of talented students in the pipeline from high school through undergraduate and graduate degree programs to enhance quality, quantity, and diversity in support of the needs of industry locating in Arizona.

FY 2002 GOALS/OBJECTIVES

Overall and specific FY 2002 goals and objectives include:

- Equip ASU to effectively partner with all users of technology in Arizona, including the computer hardware, computer software, and information technology industries.
- Establish ASU as a full partner in leading-edge research with local and national organizations by establishing collaborative partnerships with technology companies.
- Expand the supply of graduates qualified to work in Arizona's computing industries by providing opportunities for students to interact with regional employers, and engage in leading research and leadership development activities.
- Enhance the value of our undergraduate and graduate programs for the software, information science, knowledge systems, and e-commerce industries.
- Provide internationally recognized research to attract a growing proportion of the research and development for computer hardware, computer software, and network technology to Arizona.
- Attract nationally competitive research faculty as well as highly promising junior faculty to bridge disciplines, supplement existing teams, and forge entirely new areas of inquiry in Embedded Systems, Bioinformatics, and Knowledge Systems.
- Establish interdisciplinary faculty research teams in high potential areas where ASU strengths align with national needs and research agendas.
- Attract \$2,000,000 in external funding in the first year.
- Establish internship programs through the Embedded Consortium and Software Factory that support 20 internships.
- Develop and pilot a high school software engineering course for at least 25 students.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
INFORMATION SCIENCE

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REVISED EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003 PROJECTED</i>	<i>FY 2004 PROJECTED</i>	<i>FY 2005 PROJECTED</i>	<i>FY 2006 PROJECTED</i>
Return on Investment						
1. New research funding	\$2.0M	\$2.1M	\$2.0M	\$2.0M	\$2.5M	\$4.0M
Technology Transfer						
2. New software packages distributed	1	0	2	2	3	3
3. Hits per month on research websites	1,000	Not Yet Available	3,000	5,000	8,000	10,000
4. Invention disclosures ^(a)						
5. Patent applications ^(a)						
6. Patents ^(a)						
7. Startup companies ^(a)						
Economic Development						
8. Companies identifying ASU as a factor for relocating or expanding in AZ	1 large 2 small	2 large	1 large 3 small	1 large 4 small	1 large 4 small	1 large 4 small
Workforce Contributions						
9. Growth in graduates from CS, CSE, IE, CIS, and Comp Math	20	-11	40	60	60	60
10. Minority enrollment growth (% of total enrollment)	2%	1%	2%	2%	2%	2%
Curriculum Innovations						
11. High school students completing software design material	25	88	30	50	50	50
12. New courses introduced or revised	4	6	6	6	6	6
13. Internships (industry or Software Factory)	20	32	40	50	50	50

^(a) The individual measures for invention disclosures, patent applications, patents, and startup companies are aggregated for the Biosciences/Biotechnology, Information Science, Manufacturing, and Materials initiatives and reported in the Technology Transfer initiative.

FY 2002 RESULTS AND ACCOMPLISHMENTS

- Faculty recruiting included: Two targeted faculty hired in Computer Science/Embedded Systems; one professor hired in Information Systems/Knowledge Systems; and one professor hired in Bioinformatics.
- Information Systems program ranked 10th nationally by US News and World Report.
- Implemented a year-long effort through websites, workshops, and meetings with faculty groups to encourage emphasis on strategic planning for relevant interdisciplinary research and related performance measures.
- Awarded \$1,170,000 to five teams of faculty in the areas of Wireless Communications, Knowledge Systems, Distributed Media, E-commerce, and Multimedia for the Disabled as seed grants to initiate high return interdisciplinary research programs.
- Formed the Consortium for Embedded and Internetworking Technologies with Motorola and Intel. First year funding from partners was \$1,000,000.
 - Awarded \$370,000 in research seed funds, \$170,000 in curriculum development funds, and 32 internships for academic credit and pay. The curriculum development support immediately attracted \$490,000 in matching National Science Foundation (NSF) awards.
 - The Consortium has drawn national attention in the Electronic Times and from the American Society for Engineering Education (ASEE), as well as the local press.
- Formed Connection One, a consortium focused on wireless technologies. Six technology companies contributed \$300,000 of industrial support to date. NSF selected Connection One as an Industry/University Cooperative Research Center (I/U CRC) and awarded \$225,000 in funding for further development of the consortium.
- Established the Center for Advancing Business through Information Technology (CABIT) in the College of Business to explore how technological innovations are transforming business operations in the new economy. FY 2002 external grants from Intel totaled \$63,000.
- Developed a high school software engineering curriculum, piloted in four Phoenix high schools in Fall 2001 and Spring 2002. Three of the high schools had predominantly minority populations.
- Supported the establishment of the ASU Software Factory to provide professional software development for students, and sponsored projects through a setting that incorporates comprehensive research on human/organizational factors in software development.
- Due to the weak economy and poor job market, many graduate students deferred graduation in FY 2002, although the number of students in progress reached an all-time high. Since the Information Technology initiative was ramping up operations in FY 2002, we expect to see more of an impact on projected graduate and minority growth beginning in FY 2003.
- Major research initiatives that contributed to software and website development were not funded until Spring 2002. Software packages are currently under development, and the research-related websites are just now being created. As a result, during FY 2002 we were unable to begin distributing new software packages or capturing the hits per month on the research websites. We expect that software distribution will begin by December 2002 and websites will begin collecting hit data by September 2002.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
E-LEARNING (IT)

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 1,400,000	\$ 1,356,934	\$ 1,540,000	\$ 1,780,000	\$ 2,250,000	\$ 2,300,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 526,000	\$ 480,352	\$ 552,400	\$ 580,000	\$ 789,000	\$ 828,500
ERE	102,600	108,730	107,700	113,100	153,900	161,600
All Other Operating	771,400	90,580	879,900	1,086,900	1,307,100	1,309,900
TOTAL OPERATING BUDGET	1,400,000	679,662	1,540,000	1,780,000	2,250,000	2,300,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 1,400,000	\$ 679,662	\$ 1,540,000	\$ 1,780,000	\$ 2,250,000	\$ 2,300,000

INITIATIVE OVERVIEW

The Center for Research, Development and Assessment in Electronic Learning Environments has been established in response to APNE and the recommendations of the Governor's Task Force on Higher Education. The Center is dedicated to using information technology to transform teaching and learning and to better prepare graduates for the Arizona workforce. Through the use of Web technologies, place-bound Arizona citizens will have increased access to an education; NAU graduates will be skilled at learning via the Web; and learning will be enhanced using information technology tools. Research in innovative applications of advanced technology into the learning process, coupled with assessment of the actual learning students experience, will assure a high impact of this project on NAU students, and on students across the state.

Some anticipated outcomes are:

1. Use Web technology to transform learning and teaching in both residential and distance education
2. Assess learning effectiveness associated with information technology-mediated learning environments
3. Increase baseline technological literacy skills of all NAU baccalaureate graduates
4. Provide advanced information technology skills to NAU undergraduates through modifications and new academic programs
5. Assess technological literacy skills of all NAU graduates

FY 2002 GOALS/OBJECTIVES

1. Organize and staff projects
2. Support course development efforts of Access/Workforce Development projects
3. Integrate technology skills into one or more large-enrollment courses

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
E-LEARNING (IT)

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
	<i>REV EST</i>	<i>ACTUAL</i>				
Return on Investment						
1. Grants and contracts rec'd for hdw/softw dev						
2. Grants and contracts rec'd for curriculum innovation	\$50,000	\$50,000				
3. Proposals made for grants	1	1				
Technology Transfer						
4. Web courses developed	10	125				
5. Software products tested, partnered, and launched	0	0				
6. Publications, grant applications	2	2	2	3	3	5
7. Analysis of infrastructure for potential improvements	1	1	1	1	1	1
8. Faculty using training and support staff to integrate online or other technology into courses:	25	150	175	190	190	190
9. Faculty using online technology within courses	100/semester	94/semester	100/semester	110/semester	110/semester	110/semester
10. High-profile research conferences co-sponsored or hosted	0	0	0	1	0	1
Work Force Contributions						
11. Increase in graduates with New Economy skills						
12. Core classes with New Economy theme		3	3	5	5	5
13. Technology-related certificates available	2	2	2	3	4	4
14. Increase in NAU students with technological literacy skills		1500	1500	1500	1500	1500
Partnerships						
15. Community College transfers with electronic portfolios						
16. Increase in number of industry/government partners			1	2	2	2

FY 2002 RESULTS AND ACCOMPLISHMENTS

This year's results from this project will have significant impact on the student experience with technology at NAU. Future developments will focus on research and assessment of technologically enhanced instruction and identification of "best practices" in the field.

Notable outcomes include:

1. Instruction in practical technology skills has been integrated into the English composition course required of all students. Skills such as word processing, e-mail, web search, list-serve/chat, and web page design will serve the students well throughout their college careers and beyond. This course will affect over 1,000 students per semester.
2. A junior-level writing class, ENG 305, has been redesigned to directly assess students' technological literacy skills.
3. The first-level computer information systems class, CIS 120, has been redesigned so that much more of its content is available to students wherever they may be; previous versions require significantly more on-campus attendance. It also takes advantage of our advanced "Citrix" server which makes complex software easily accessible to those with access to limited computer power. Currently serving about 500 student per semester, these changes will enable it to serve approximately twice that number.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
E-LEARNING (IT)

4. A popular communications class, COM 101, has been redesigned to combine interactive technology-delivered modules with traditional classroom experience.
5. Use of web technology has been integrated into 16 traditional courses, and 10 liberal studies courses have been redesigned for web delivery. This will enable both distance and campus students to more easily and flexibly complete their program requirements.
6. Questions about students' perceived technological competence and NAU's contributions to it have been incorporated into several standard student-opinion surveys. At this time, 69% of students believe that NAU has been instrumental in their acquiring the technological skills they have. We expect both their skills and NAU's contributions to them to increase significantly through this initiative's outcomes.
7. We have hired a specialist in assessment in electronic environments who, along with our soon-to-be-hired director of the Center for Research, Assessment and Development in Electronic Environments, will be assessing student learning and "best practices" in technology-enhanced or -delivered instruction.
8. Staff involved in this project also contributed to the development of 100+ new web courses offered through Distributed Learning Services and Access/Workforce Development as well as E-learning auspices. Over 3,400 students were enrolled in these courses in FY 2002.
9. Personnel from Eduprise, a nationally-known web-and-distance-learning consulting firm, reviewed and recommended improvements for infrastructure of E-learning initiative in the larger context of distance learning initiatives at NAU. These recommendations will be incorporated into upcoming planning for this initiative.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
INTERNET TECHNOLOGY & COMMERCE INSTITUTE

	<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
	<i>REV BUDGET</i>	<i>ACTUAL</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>
REVENUE	<u>\$4,000,000</u>	<u>\$3,876,954</u>	<u>\$4,300,000</u>	<u>\$4,200,000</u>	<u>\$4,100,000</u>	<u>\$4,400,000</u>
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 998,005	\$ 556,463	\$ 2,388,300	\$ 2,557,300	\$ 2,318,700	\$ 2,167,300
ERE	194,575	74,656	465,700	498,700	452,100	422,600
All Other Operating	2,807,420	1,602,736	1,446,000	1,144,000	1,329,200	1,810,100
TOTAL OPERATING BUDGET	<u>4,000,000</u>	<u>2,233,855</u>	<u>4,300,000</u>	<u>4,200,000</u>	<u>4,100,000</u>	<u>4,400,000</u>
CAPITAL BUDGET						
Building Renovation	-	-				
Debt Service						
TOTAL CAPITAL BUDGET	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
EXPENDITURES GRAND TOTAL	<u>\$ 4,000,000</u>	<u>\$ 2,233,855</u>	<u>\$ 4,300,000</u>	<u>\$ 4,200,000</u>	<u>\$ 4,100,000</u>	<u>\$ 4,400,000</u>

INITIATIVE OVERVIEW

The focus of this initiative is the development of an Internet Technology, Commerce and Design Institute (ITCDI). ITCDI is seeking approximately \$21.0 million over the next five years to achieve research, development, and outreach goals to catalyze economic growth in internet-related technologies. ITCDI is not a physical entity in the traditional sense but instead is a "virtual institute" comprised of University of Arizona academics and local Arizona industry leadership, ideas, and the support to foster concept development, awareness, and economic growth. ITCDI will become a clearinghouse for the sharing of ideas, resources, and expertise under the common goal of promoting internet technology-based economic growth in Arizona's economy. It will be a primary source of talent in a broad range of businesses and industries which rely on the internet in various dimensions for their business success.

FY 2002 GOALS/OBJECTIVES

The primary goal of ITCDI is to create a unique multidisciplinary culture to:

- (a) train a new breed of Internet Technology and commerce leaders;
- (b) establish theoretical foundations for the practical understanding of Internet Technology and commerce; and
- (c) develop Internet enabling technologies (software and hardware) to design, optimize, and manage Internet systems and their services.

The ITCDI will create the stimulus for the growth of internet related businesses, educational initiatives, workforce development, and university research opportunities.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
INTERNET TECHNOLOGY & COMMERCE INSTITUTE

PERFORMANCE MEASURES/DELIVERABLES

	<i>FY 2002 REV EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Return on Investment						
1. New research funding	\$1.0M	\$1.1M	\$1.5M	\$2.0M	\$3.0M	\$4.0M
Technology Transfer						
2. Successful spin-off/start up companies	0	0	2	2	3	5
3. New university/industry collaborations	3	4	5	5	5	5
4. Patent applications(a)	1	0	4	4	4	10
5. Patents ^(a)	0	0	2	2	2	4
Economic Development						
6. Companies identifying UA as a factor for relocating or expanding in AZ	0	1	1	1	1	1
Workforce Contributions						
7. Graduates (all levels, incl new ITCDI grads, minors, Info Sci, non-tech minor)	75	109	160	280	440	625
Curriculum Innovations						
8. Curricular innovations for Access and Workforce	3	4	5	5	7	7
9. New courses introduced	2	2	3	3	4	5
10. Internships (industry or Software Factory)	10	12	15	15	20	25

^(a) The individual measures for invention disclosures, patent applications, patents, and startup companies are aggregated for the Biosciences/Biotechnology, Information Science, Manufacturing, and Materials initiatives and reported in the Technology Transfer initiative.

FY 2002 RESULTS AND ACCOMPLISHMENTS

- Research support from Prop 301 (TRIF) ITCDI was significantly leveraged (approximately \$1.1 million in IT-related support).
- As a result of Prop 301 support, industry partnerships were expanded or developed with AOL, Intel, Microsoft.
- As a result of Prop 301 faculty support in CS, ECE, and MIS, additional students were accommodated in those programs.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ACCESS AND WORKFORCE DEVELOPMENT

	FY 2002 REV BUDGET	FY 2002 ACTUAL	FY 2003 BUDGET	FY 2004 BUDGET	FY 2005 BUDGET	FY 2006 BUDGET
REVENUE	\$ 2,200,000	\$ 2,132,300	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 356,300	\$ 513,800	\$ 1,165,500	\$ 1,223,800	\$ 1,285,000	\$ 1,349,300
ERE	76,000	78,300	215,600	226,400	237,700	249,600
All Other Operating	1,117,700	458,100	418,900	349,800	277,300	201,100
TOTAL OPERATING BUDGET	1,550,000	1,050,200	1,800,000	1,800,000	1,800,000	1,800,000
CAPITAL BUDGET						
Building Renovation	650,000		400,000	400,000	400,000	400,000
Debt Service			-	-	-	-
TOTAL CAPITAL BUDGET	650,000	-	400,000	400,000	400,000	400,000
EXPENDITURES GRAND TOTAL	\$ 2,200,000	\$ 1,050,200	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000

Note: FY 2002 expenditures include encumbrances at 6/30/02.

INITIATIVE OVERVIEW

The Access and Workforce Development initiative provides support to:

- Increase access to educational programs that will equip Arizona citizens with the skills necessary to compete in the New Economy.
- Lower barriers of time and space that restrict some of our citizens from full participation in the New Economy.
- Improve the efficiency of Arizona's higher education system by raising retention and graduation rates.
- Address Arizona's workforce development needs with particular emphasis on the science, math, engineering, and technology fields.

Component projects include:

- Information Technology Across the Curriculum (ITATC) -- The ITATC initiative helps to insure that all ASU undergraduates, regardless of major, have the opportunity to acquire technical skills that complement their discipline specific knowledge.
- Technology Infrastructure -- The initiative funds major improvements in the university infrastructure in support of the campus-wide technology infusion into undergraduate and graduate curriculum; the rapidly expanding e-learning program development; and the University's efforts to improve retention and graduation rates.
- E-Learning Program Development -- This project provides for greater access to educational programs critical to the New Economy by accelerating the pace of development of distance education and online courses and degree programs.
- Science, Math, Engineering and Technology (SMET) Education -- This project addresses Arizona's K-12 teacher shortage, especially in the critical Science and Math secondary levels. The SMET project also addresses the quality of teacher preparation programs, recruitment and retention issues, and SMET education from an overall perspective.
- Retention and Graduation -- ASU recognizes that both the quality of our academic programs and the efficiency with which we provide the coursework ultimately govern the long-range success in providing access to academic programs and contributing to workforce development. This component provides particular emphasis on advancing students admitted with academic deficiencies who have otherwise solid academic credentials.
- Campus Initiatives at ASU West and ASU East -- Project funding supports the development of an Applied Computing B.S. program at ASU West and the Microelectronics Teaching Factory at ASU East.

FY 2002 GOALS/OBJECTIVES

FY 2002 goals and objectives included:

- Conduct eight ASU Main faculty searches for ITATC positions and hire six Information Technology (IT) staff/support personnel.
- Strengthen technology support for instruction at undergraduate and graduate levels.
- Provide funds for mediating classrooms and laboratories to support technology enhanced instruction.
- Identify e-learning programs for development in Summer and Fall 2002 through an internal competitive process.
- Develop strategies for improving the ASU record for recruiting, training, and retaining secondary level math/science teachers.
- Host a system-wide conference for college and university level faculty with primary responsibility in SMET disciplines.
- Develop strategies for improving ASU retention and graduation rates.
- Support the ASU West development of an Applied Computing B.S. program.
- Partner with Intel and Motorola in the development of the Micro Electronics Teaching Laboratory at ASU East.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ACCESS AND WORKFORCE DEVELOPMENT

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REVISED EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003 PROJECTED</i>	<i>FY 2004 PROJECTED</i>	<i>FY 2005 PROJECTED</i>	<i>FY 2006 PROJECTED</i>
Return on Investment						
1. Increase in number of teachers who graduate with math/science certification	50	9	50	50	75	75
2. Additional mediated classrooms on Main Campus	2	8*	2	2	2	2
3. Additional faculty trained in the use of technology in course design	20	96	20	20		
Work Force/Access Contributions						
4. New distance education and online courses	20	72	30	30	30	30
5. New distance education online degree programs	1	1	1	1	1	1
6. Fully operational Microelectronics Teaching Factory at ASU East	X	X				
Specific Curriculum Innovations for the New Economy						
7. Tier 1 introduction to Information Technology for all students	X	X				
8. Tier 2 package of 3 courses	X	Partially				
9. Tier 3 concentration for BIS degree			X			
10. BS Applied Computing (ASU West)		Approved	X			
Other Milestones						
11. Infrastructure necessary to support seamless enrollment for all Arizona citizens who take courses at more than one university by Fall 2003				X		
12. Statewide adoption of education pathways for elementary, secondary, and special education programs by 2002	X	X				

* Fully operational by September 2002.

FY 2002 RESULTS AND ACCOMPLISHMENTS

Results and accomplishments for FY 2002 include:

- A total of nine ITATC searches approved and six appointments made in Nursing, Education, Law, Engineering/Fine Arts (joint), English, and Languages and Literature.
- Six IT staff/support personnel hired: two in Instructional Support; two in Extended Education; one in the Center for Learning and Teaching Excellence; and one in Data Analysis. The Data Analysis position provides support for retention and graduation efforts.
- The initiative provided funds to purchase a blackboard server and a streaming video server that have significantly strengthened our ability to support technology enhanced instruction. In addition, we established a wireless test bed project and have contracted for the development of a portable technology module which provides full instructor level classroom mediation at a unit cost of approximately \$50,000.
- Approximately \$600,000 allocated to upgrade technology support in classrooms and laboratories in the College of Engineering and Applied Sciences, and Biology Department.
- An internal grant competition awarded funds for e-learning program development in: Technical Communication at ASU Main and ASU East; Semiconductor Manufacturing at ASU Main; Fire Service Management at ASU East; Security Engineering Technology at ASU East; Environmental Technology Management at ASU East; Connect-MBA at ASU West; and, Special Education at ASU West.
- Planning is underway for education faculty from all three campuses to develop content specific modules for secondary science/math induction training. These modules will provide three graduate credits to participants currently enrolled in one of ASU's Masters' degree programs. Each module will emphasize the mathematics and science included in state and national standards.
- With the partial support of a federal grant to the Arizona Teaching Excellence Coalition (AZTEC) project, the Center for Research on Education in Science, Mathematics, Engineering and Technology (CRESMET) hosted a workshop in the summer of 2002 on Technology and Visualization in the College Classroom. The workshop was open to ASU and Community College faculty and included a team of professional curriculum developers along with current and former K-12 teachers.
- Data Analysis personnel developed a software support tool for retention and graduation efforts. This tool provides a user friendly working environment for faculty and advisors who have primary responsibility for retention efforts. In addition, the Summer Bridge program added a day program to help address retention problems for otherwise capable high school students deficient in key math and/or English skills.
- Dr. Richard Newman was hired as Director of Training Operations for the Microelectronics Teaching Laboratory at ASU East. Dr. Newman is actively involved in the preparation of proposals for external funding and in other outreach activities targeting industry in the Phoenix metropolitan area.
- ABOR approved the B.S. in Applied Computing degree program at ASU West. The initial search for a program director was unsuccessful. The FY 2002 initiative funds allocated for this position were reallocated on a one-time basis for campus activities that support the development of Applied Computing, including facilitators, outside presenters, session leaders, and stipends for participating faculty.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ACCESS/WORKFORCE DEVELOPMENT

	FY 2002 REV BUDGET	FY 2002 ACTUAL	FY 2003 BUDGET	FY 2004 BUDGET	FY 2005 BUDGET	FY 2006 BUDGET
REVENUE	\$ 3,900,000	\$ 3,780,031	\$ 4,000,000	\$ 3,000,000	\$ 2,000,000	\$ 2,000,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 1,543,500	\$ 1,429,140	\$ 1,697,500	\$ 858,111	\$ 960,265	\$ 952,871
ERE	301,000	329,342	331,000	167,300	184,300	176,300
All Other Operating	2,055,500	332,812	1,971,500	1,974,589	855,435	870,829
TOTAL OPERATING BUDGET	3,900,000	2,091,294	4,000,000	3,000,000	2,000,000	2,000,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 3,900,000	\$ 2,091,294	\$ 4,000,000	\$ 3,000,000	\$ 2,000,000	\$ 2,000,000

INITIATIVE OVERVIEW

This initiative represents a major step forward in Northern Arizona University's ability to provide education services to Arizona citizens who are time- or place-bound.

Additional funding support of NAU's Distributed Learning System is an investment in the New Economy that directly supports the identified needs of the Governor's Task Force on Higher Education, the Arizona Partnership for a New Economy, and the ABOR guidelines. This initiative will:

1. Address the teacher shortage: emphasizes on alternative certification and preparation of mathematics and science teachers
2. Provide engineers with advanced training to support business and industry
3. Increase the number of advance-trained nurses/other health professionals to maintain quality of life
4. Educate information technology professionals to serve the new economy needs of the state
5. Prepare postbaccalaureate business/non-profit managers to be leaders in existing/new businesses
6. Build the support infrastructure for future development of degree/certificates responsive to the needs of the new economy

FY 2002 GOALS/OBJECTIVES

1. Organize and develop programs in education, health professions, and business
2. Develop support infrastructure for students enrolled in programs away from the Flagstaff campus

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ACCESS/WORKFORCE DEVELOPMENT

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002</i> REV EST	<i>FY 2002</i> ACTUAL	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Return on Investment						
1. Grants/contracts proposed	\$150,000		\$100,000	\$150,000	\$150,000	\$200,000
Technology Transfer						
2. Courses/modules sold/brokered	0	0	1	2	2	4
Economic Development						
3. Companies identifying NAU as reason for relocating or expanding in AZ	1	0	1	1	2	2
Work Force Contributions						
4. Potential new students served						
-New teachers	275	250	450	545	545	545
-Nurses/health professionals	120	120	200	200	200	200
-Engineers with advanced training	21	20	20	20	30	30
-Business/non-profit managers	50	44	50	60	70	80
Specific Curriculum Innovations						
5. Degree/certificate programs	11	11	12	15	18	25
6. Statewide access (rural and urban)	yes	yes				
7. Regional/national/global access	yes	yes				
8. New/revised courses	54 (39/15)	75	80	100	100	100
Partnerships						
9. Community college partners	13	14	15	15	15	15
10. Tri-University (ASU, NAU, UofA)	3	3	3	3	3	3
11. K-12 partners (schools/districts)	30	30	30	30	30	30
12. Industry partnerships	2	2	4	4	5	5

FY 2002 RESULTS AND ACCOMPLISHMENTS

NAU has been enormously successful with this initiative:

I. Programs

A. Education

1. Alternative Teacher Certification - three 'cohorts' (20-25 students each) established. Two of these cohorts consist of working adults who want to change careers, and one is filled with teachers currently holding an emergency certification.
2. Master of Education in Educational Technology -- existing program expanded by 60% -- 110 new students involved in this all-web program to learn to teach effectively with and about technology.
3. English as a Second Language Endorsement -- existing program expanded by nearly 100% -- 78 new students involved in this program to enable teachers to help students for whom English is not their native language to learn effectively. Program is being converted to web.
4. Substitute Teacher certification -- planning and marketing of this program to enable substitute teachers to become more effective.
5. Science/Math education -- web-delivered mini-courses designed to allow current teachers to acquire certification for teaching math and science. Two Physics and two Biology courses been field-tested.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ACCESS/WORKFORCE DEVELOPMENT

B. Health Professions

1. Accelerated Bachelor of Science in Nursing; Registered-Nurse to Bachelor of Science in Nursing program. 30 students enrolled in these programs to help address Arizona's nursing shortage. Entire curriculum except for clinical experiences can be delivered on-line.
2. Bachelor of Science in Dental Hygiene -- Program expanded from 11 to 57 students. Two new courses created; four revised.
3. Bachelor of Applied Science in Health Promotion -- 44 students enrolled in this new program. 6 courses developed or revised for web delivery.

C. Business

1. Master of Science in Management -- Program more than doubled in size to 60 students. Allows students to obtain basic grounding in business courses while specializing in nontraditional areas such as Public Service management. 6 courses developed or revised for web presentation.
2. Bachelor of Applied Science in Computer Technology -- Program designed as a follow-on to community college degree in Computer Technology. Main focus has been on establishing articulation agreements with community colleges. 11 students admitted to program.

II. Infrastructure

- A. Student Services -- toll-free phone and web access for students. Advisors hired to work with students at a distance. On-site assistance available at 31 offices around the state.
- B. Technical infrastructure -- Internet bandwidth doubled to meet high-bandwidth demands of students. Internet 2 connectivity added to support national exchange of instructional and research data. Modem pools added in rural areas to better serve students. Citrix server installed to enable complex software to be accessed by students with access to limited computer power.
- C. Faculty support -- 70+ web courses developed and taught each semester with a combination of Prop 301 and Distributed Learning Services stipends.
- D. Multi-purpose, multi-media marketing materials developed. Evaluation of most effective sources continuing.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ACCESS TO HIGHER EDUCATION

	<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
	<i>REV BUDGET</i>	<i>ACTUAL</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>
REVENUE	<u>\$1,000,000</u>	<u>\$969,239</u>	<u>\$1,000,000</u>	<u>\$1,000,000</u>	<u>\$1,000,000</u>	<u>\$1,000,000</u>
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 509,000	\$ 6,870	\$ 648,900	\$ 681,300	\$ 767,500	\$ 805,900
ERE	99,255	1,381	126,500	132,900	149,700	157,200
All Other Operating	391,745	27,730	224,600	185,800	82,800	36,900
TOTAL OPERATING BUDGET	<u>1,000,000</u>	<u>35,981</u>	<u>1,000,000</u>	<u>1,000,000</u>	<u>1,000,000</u>	<u>1,000,000</u>
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
EXPENDITURES GRAND TOTAL	<u>\$ 1,000,000</u>	<u>\$ 35,981</u>	<u>\$ 1,000,000</u>	<u>\$ 1,000,000</u>	<u>\$ 1,000,000</u>	<u>\$ 1,000,000</u>

INITIATIVE OVERVIEW

The goal of this initiative is to increase the overall educational level of the state of Arizona by making higher education more accessible to those facing barriers of time, place, disability, culture, career, family obligation, or other circumstances. Recognizing that access is a complex mix of availability, affordability, and applicability, this initiative funds diverse development activities that divide broadly into content projects (course and program development by academic departments assisted by expert technical staff) and infrastructure projects (improved connectivity, improved capacity for content delivery, etc.). Most of the work funded through this initiative will be structured as projects of fixed duration rather than as ongoing research programs. Four projects have been approved to date:

1. Establishment of a Distance Learning Support Team within the Faculty Center for Instructional Innovation
2. Creation of an online Nursing PhD program, funded temporarily as a supplement to a grant from Arizona Regents University
3. Creation within the University Libraries of advanced document delivery capability to serve students enrolled in online courses
4. Creation of a high-speed Internet connection between UA Main and the UA South/Sierra Vista service area

FY 2002 GOALS/OBJECTIVES

As originally envisioned, the first year's objectives would have emphasized infrastructure and other foundations (projects 1 and 4 above), with subsequent years emphasizing academic program content development (such as project 2). Major objectives included establishment of a technical support team to assist in the development of online courses and programs and the implementation of a high-speed link to Sierra Vista for delivery of high-bandwidth educational content. Delay in the implementation of the high-speed link led to some changes in the timing of projects, permitting earlier investment in academic program development. Significant anticipated savings on the revised plan for the link allowed consideration of an additional infrastructure project aimed at supporting distance courses with electronic document delivery from the University Libraries. Other infrastructure projects (involving increased capacity for online course production) have been considered by the Steering Committee, generally in conjunction with the requirements of particular academic programs.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ACCESS TO HIGHER EDUCATION

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002</i> <i>REV EST</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
1. Increased capacity to deliver courses	DS-3 line(s) leased and installed	plan under revision				
2. New programs brought online	2 new/ expanded	1 new in development	2 new programs	2 new programs	2 new programs	2 new programs
3. New enrollments	20 new	NA	40	60	80	100

FY 2002 RESULTS AND ACCOMPLISHMENTS

1. Distance Learning Support Team--established and partially staffed.
 - Management structure defined and advisory groups enlisted
 - Positions (5 FTE) approved for FY 2002 filled; hires pending for additional positions (4 FTE)
 - Office and production space for Team assigned within Faculty Center for Instructional Innovation
 - Active collaboration underway with Nursing faculty, including significant assistance with planning and training
 - Active collaboration underway with interdisciplinary faculty group, including significant assistance in securing NSF grant for Science and Technology Center and significant commitment to instructional materials development

2. Academic programs--online Nursing PhD in development.
 - Curriculum planned and approved by College
 - Nursing faculty actively developing first-year courses

3. High-speed link to Sierra Vista--plan still evolving.

4. Library Services for Distance Learning--setting up.
 - Staff positions defined
 - Hardware and software specifications developed
 - Products most suitable to purposes selected

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
WORKFORCE: MATH & SCIENCE TEACHER PREPARATION

	<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
	<i>REV BUDGET</i>	<i>ACTUAL</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>
REVENUE	\$ 800,000	\$ 775,391	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 259,000	\$ 275,689	\$ 260,100	\$ 273,200	\$ 286,900	\$ 301,200
ERE	50,554	48,319	50,700	53,300	55,900	58,700
All Other Operating	490,446	294,273	489,200	473,500	457,200	440,100
TOTAL OPERATING BUDGET	800,000	618,281	800,000	800,000	800,000	800,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 800,000	\$ 618,281	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000

INITIATIVE OVERVIEW

- * To address critical shortages in the state for math, science, and agricultural science teachers from elementary through secondary education levels.
- * To educate and train over 100 new secondary school math and science teachers.
- * To educate and train 150 new elementary school math and science teachers.
- * To educate and train over 40 new agricultural science teachers.

FY 2002 GOALS/OBJECTIVES

The Teach for Tucson program focuses on the recruitment and training of individuals with demonstrated interest and academic abilities in science and mathematics who desire to become teachers in grades four through eight. A cohort of 30 students completes a year-long Masters degree while also gaining teacher certification. Eight partner school districts participate in the selection of these candidates and support their training through internship experiences in their schools.

Currently, 150 high school and community college students have received information on opportunities to become Agricultural Science Teachers. This campaign continues to include both initial visits/presentations and then personalized follow-up contacts with the most interested students. Twenty-seven Spring 2002 scholarship applications were collected on November 15. The average allocation was approximately \$741. The application was posted on the department website providing greater access to students.

Activities in math/science teacher preparation can be broadly described in 3 categories: (1) providing an experienced, master teacher to work with the beginning teachers who have completed the College of Science Teacher Preparation Program, (2) support of high quality field-based experiences for preservice science teachers (building a community of teacher preparation partners that includes practicing science teachers as well as university faculty members who teach the preservice teachers in courses at the university), and (3) recruitment of science majors into precollege science teaching (ten scholarships will be awarded to academically talented science majors who are interested in pursuing teacher certification through enrollment in courses in the CoS TPP).

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
WORKFORCE: MATH & SCIENCE TEACHER PREPARATION

1. Completers of Secondary Science Teacher Prep	11	1	7	12	20	25
2. Completers of Secondary Math Teacher Prep	3		3	3	5	5
3. Completers of Elementary Math/Science Teacher Prep	30	29	30	30	30	30
4. Completers of Agricultural Science Teacher Prep	5		5	10	10	10
Curriculum Innovations						
5. Science Prep Course Development in College of Science						
Specific Collaborations						
6. Collab. Between Colleges of Ed, Sci, and Agric&Life Sci						

FY 2002 RESULTS AND ACCOMPLISHMENTS

Significant progress was made in all areas toward increasing the number of math and science and agricultural science teachers in the K-12 system. For example,

- Elementary Math/Science Teacher Preparation:
 - over 80 applicants for 30 positions
 - involved eight collaborating school districts in the Tucson area
 - applicants brought in an average of over 37 math and science credits
 - applicant ages ranged from 24 to 55 years
- Secondary Science Teacher Preparation worked collaboratively with Pima Community College to offer their 200-level science teacher preparation course at Pima.
 - Although Secondary Science Teacher Preparation completers were below projections, the new program is actively recruiting new students and expects to recover substantially this year.

The Center for Recruitment and Retention of Mathematics Teachers (CRRMT):

- Tutoring Project involved 15 students in Fall and 28 new students plus 10 returning students in Spring for 15 mathematics teachers in the city.
- The CRRMT also supported an Induction Program for new Mathematics teachers, working in FY 2002 with 15 first- and second-year middle and high school mathematics teachers.
- Agricultural Education:
 - included both initial visits/presentations and personalized follow-up with interested students; several presentations were made at State FFA Leadership Conferences and Camps.
 - involved 37 scholarships to students, 12 new to the program.
 - involves internships with agricultural science teachers statewide for high school students. Currently, six high school students have been accepted for internships.
- Science Preparation Course Development:
 - the entire Secondary Science program is being developed, with an emphasis on assessment
- Collaborations between Colleges of Education, Science, and Agriculture and Life Sciences:
 - the entire project is managed by a team of faculty and associate deans from the Colleges of Education, Science, and Agriculture and Life Sciences, who work together on all policy, budget, and operational issues. This TRIF initiative is one of the strongest collaborations that exists between these Colleges.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
MANUFACTURING

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 479,200	\$ 464,400	\$ 500,400	\$ 522,800	\$ 813,600	\$ 1,210,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 341,000	\$ 99,700	\$ 375,900	\$ 394,800	\$ 610,600	\$ 907,200
ERE	68,300	9,900	69,500	73,000	113,000	167,800
All Other Operating	69,900	23,600	55,000	55,000	90,000	135,000
TOTAL OPERATING BUDGET	479,200	133,200	500,400	522,800	813,600	1,210,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 479,200	\$ 133,200	\$ 500,400	\$ 522,800	\$ 813,600	\$ 1,210,000

Note: FY 2002 expenditures include encumbrances at 6/30/02.

INITIATIVE OVERVIEW

Activities in the Manufacturing Research initiative include:

- Developing the High Technology Manufacturing Supply Networks research agenda through collaboration with several academic institutions and industry partners.
- Identifying and working with industry partners to develop a roadmap to guide further High Technology Manufacturing Supply Networks research activities.
- Conducting funded basic research in Semiconductor Manufacturing Operations.

Projects undertaken as part of the Manufacturing Research initiative began with the semiconductor industry as the research focus. The complexity of the semiconductor industry and its strategic importance to the Arizona economy will serve as a valuable first test of manufacturing research at ASU. Future plans include extending initiative research to other manufacturing sectors.

FY 2002 GOALS/OBJECTIVES

FY 2002 goals and objectives included:

- Submit major research proposal to the National Science Foundation (NSF) to support basic research in Semiconductor Manufacturing Operations.
- Create research road map for High Technology Manufacturing Supply Networks.
- Identify and generate external research funds.
- Create a needs assessment and requirements definition document describing the needs in the undergraduate and graduate curriculum in Manufacturing.
- Establish internships for ten undergraduate and graduate students in high technology manufacturing firms.
- Establish a test bed, including software and hardware, for a laboratory in High Technology Manufacturing Supply Network research.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
MANUFACTURING

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REVISED EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003 PROJECTED</i>	<i>FY 2004 PROJECTED</i>	<i>FY 2005 PROJECTED</i>	<i>FY 2006 PROJECTED</i>
Return on Investment						
1. Submit proposal to NSF for basic research in Semiconductor Mfg Operations	X	X				
2. External funds generated	\$1.0M	\$550K	\$1.2M	\$1.4M	\$1.8M	\$2.0M
3. Develop five-year research prospectus to submit to private funding sources			X			
4. Submit proposal to NSF to create Manufacturing Research Center					X	
Technology Transfer						
5. Industry/University test bed established for laboratory in high technology mfg supply network research	X	In progress				
6. Form industry/university nationwide research consortium			X			
7. Create research road map in collaboration with industry	X	In progress				
8. Invention disclosures ^(a)						
9. Patent applications ^(a)						
10. Patents ^(a)						
11. Startup companies ^(a)						
Workforce Development						
12. Undergraduate and graduate students enrolled in new internship programs in high technology manufacturing firms	10	0	10	10	10	10
Specific Curriculum Innovations						
13. Multi-college certificate program in Manufacturing at undergraduate and graduate levels				X		
14. New MS degree program in High Technology Manufacturing Supply Networks					X	

^(a) The individual measures for invention disclosures, patent applications, patents, and startup companies are aggregated for the Biosciences/Biotechnology, Information Science, Manufacturing, and Materials initiatives and reported in the Technology Transfer initiative.

FY 2002 RESULTS AND ACCOMPLISHMENTS

Results and accomplishments for FY 2002 include:

- The Manufacturing initiative provided research project funding for faculty and graduate students from the College of Business and the College of Engineering and Applied Sciences. One of the projects is an ongoing project with Intel for modeling and analysis of semiconductor manufacturing supply networks. Intel committed \$150,000 in matching funds. Semiconductor Research Corporation (SRC) granted a total of \$338,000, with \$108,000 in the first year, and NSF granted \$300,000.
- The initiative purchased hardware to establish a test bed for a laboratory in High Technology Manufacturing Supply Network research. We are still in discussions with Oracle regarding the startup of the test bed, and Motorola for access to the SAP software necessary for the project.
- A research agenda and road map for High Technology Manufacturing Supply Networks is in development. We expect to complete this activity by August 2002 and will include a plan for specific research projects with faculty, student, and industry resources identified and committed.
- The initiative provided eight research assistantships in FY 2002. The downturn in the economy has delayed the start of the internship programs projected for FY 2002. We are continuing our discussions with Amkor, Avnet, Intel, Motorola, and others to create the manufacturing internships.
- The initiative hired a post-doctoral student to conduct research. Approximately 17 faculty members and 10 graduate students were identified to support recently submitted proposals. We also hired a senior research associate to assist with the research projects.
- We have initiated discussions with ASU East and Lean Aerospace Initiative Education Network (LAIEN) to create a needs assessment of requirements for the undergraduate and graduate curriculum in Manufacturing.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ADVANCED MATERIALS FOR THE NEW ECONOMY

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 1,512,900	\$ 1,466,400	\$ 1,538,900	\$ 1,571,000	\$ 5,040,700	\$ 5,412,700
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 155,000	\$ 115,400	\$ 619,300	\$ 844,700	\$ 1,573,200	\$ 1,992,200
ERE	42,100	19,200	114,600	156,300	291,000	368,600
All Other Operating	1,315,800	1,107,700	805,000	570,000	3,176,500	3,051,900
TOTAL OPERATING BUDGET	1,512,900	1,242,300	1,538,900	1,571,000	5,040,700	5,412,700
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 1,512,900	\$ 1,242,300	\$ 1,538,900	\$ 1,571,000	\$ 5,040,700	\$ 5,412,700

Note: FY 2002 expenditures include encumbrances at 6/30/02.

INITIATIVE OVERVIEW

The Advanced Materials for the New Economy (Materials) Initiative (with linkages to the Biotechnology and Information Technology initiatives) will accelerate ASU's participation in the nanotechnology research areas, leading to advances in microscale and nanoscale systems. The Materials Initiative builds on substantial existing strengths in nanoelectronics and emerging strengths in nanoscience and technology, and new materials such as wide bandgap semiconductors. Specifically, ASU will integrate research in physical, molecular, materials, and biological sciences with engineering to produce revolutionary nanoengineered devices including, for example, molecular electronics-based sensors and nanomagnetic memory devices. The initiative will integrate basic research and engineering in nanotechnology and advanced materials into new micro and nanoscale system concepts. Examples include novel microelectronic (low power, high power, high temperature, and/or high frequency), microfluidic, and biodevices integrated into microsystems for high value added applications in the health care, threat detection, transportation, processing, and manufacturing industries. ASU faculty make significant contributions in the materials arena, with an extensive, actively funded research portfolio totaling over \$40,000,000 in external awards. The initiative also fits well with ASU's growing reputation in outreach and teacher education in science, math and engineering. We have also established strong connections with major industrial companies and national laboratories, including Motorola, for example, where ASU leads a joint National Science Foundation (NSF) grant on nanoscale sensing and is a large subcontractor on a Defense Advanced Research Project Agency (DARPA) contract aimed at developing DNA analysis on a microchip. Other partnerships currently in place include Sandia National Laboratories, where ASU has established a new Memorandum of Understanding (MOU) and numerous joint projects, Kodak, Lockheed Martin, Lawrence Semiconductor, and Molecular Imaging.

FY 2002 GOALS/OBJECTIVES

- Significantly expand our external funding in the areas of nanotechnology and wide bandgap semiconductors. With Proposition 301 funding, conceptualize, design, fabricate and test new nanosystems for high value added applications and transfer these new technologies to the commercial sector.
- Simultaneously engage science and engineering students in next generation nanotechnology and materials research. Such research will create graduates with a hands-on education in economic and technological growth areas, enabling them to make valuable contributions as highly skilled members of the New Economy workforce.
- Provide state-of-the-art equipment and equipment upgrades for joint use interdisciplinary facilities at ASU.
- Create a staff infrastructure for new and upgraded joint use facilities.
- Attract \$3,000,000 in external funding awards in specific initiative areas.
- Bring 10 new graduate students into the pipeline in the initiative programs, provide 12 undergraduates with research experience, and establish three new external partnerships.
- Hire at least one new interdisciplinary faculty member to advance Materials objectives.
- Enhance interdisciplinary collaborative research in nanotechnology and advanced materials between departments and across colleges.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ADVANCED MATERIALS FOR THE NEW ECONOMY

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REVISED EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003 PROJECTED</i>	<i>FY 2004 PROJECTED</i>	<i>FY 2005 PROJECTED</i>	<i>FY 2006 PROJECTED</i>
Return on Investment						
1. Total external funding: new awards	\$3.15M	\$7.26M	\$3.7M	\$4.4M	\$7.0M	\$8.5M
2. External funding: new federal awards	\$2.85M	\$6.86M	\$2.5M	\$3.0M	\$5.0M	\$6.0M
3. External funding: new industrial contracts and donations	\$0.30M	\$0.40M	\$1.2M	\$1.4M	\$2.0M	\$2.5M
Technology Transfer						
4. Invention disclosures ^(a)						
5. Patent applications ^(a)						
6. Patents ^(a)						
7. Startup companies ^(a)						
Workforce Contributions						
8. New graduate students in pipeline	10	13	15	20	25	25
9. Graduate students earning degrees and entering workforce			2	8	12	15
10. Undergraduate students with research experience	12	28	10	12	15	20
Partnerships						
11. New research collaborations with industry and national laboratories	3	3	2	3	3	3

^(a) The individual measures for invention disclosures, patent applications, patents, and startup companies are aggregated for the Biosciences/Biotechnology, Information Science, Manufacturing, and Materials initiatives and reported in the Technology Transfer initiative.

FY 2002 RESULTS AND ACCOMPLISHMENTS

The Materials Initiative significantly exceeded the FY 2002 goal for external awards for new interdisciplinary funding, particularly in the nanotechnology thrust area. We also received a major new five-year workforce development grant, an NSF Integrative Graduate Education and Research Traineeship (IGERT) grant, that emphasizes interdisciplinary training and links nanotechnology and biomolecular research. Three new partnerships with Sandia National Labs, Motorola, and Lockheed Martin also helped to build our focus in nanotechnology and related applications in biotechnology. We made excellent progress in further strengthening ASU's interdisciplinary joint use facilities for nanoscience with a new electron beam lithography system, and for advanced materials/microsystems with two new high density plasma deep etch systems. We achieved this progress by leveraging the Proposition 301 funds with equipment grants, by adding two process engineers, and by linking the new bio/nano IGERT education program to the clean room processing facility for biodevices.

A summary of major accomplishments include:

- Hired a senior computational materials faculty member.
- Three new interdisciplinary faculty searches underway in interfacial chemistry, nanoceramics, and microelectromechanical systems (MEMS).
- Over \$7,000,000 in external grants.
- NSF group nanotech industrial partnership grant with Motorola and a subcontract on DARPA grant with Lockheed Martin in nano bio detection.
- Three new postdoc seed grants funded for interdisciplinary research initiatives.
- One new startup company formed - SJT Micropower Inc.
- MOU with Sandia National Labs signed which includes Sandia participation in three major interdisciplinary grant proposals, two new graduate student fellowships, and six new joint research projects.
- Two new process engineers hired in support of the Center for Solid State Electronics Research (CSSER) fabrication facility, and one support staff hired in support of Center for Solid State Science (CSSS) scanning probes facility to enhance shared interdisciplinary efforts.
- Won prestigious NSF IGERT grant for nanobiotechnology.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
TECHNOLOGY TRANSFER

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 500,000	\$ 484,600	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 38,600	\$ 59,000	\$ 206,000	\$ 216,300	\$ 227,100	\$ 238,400
ERE	8,000	9,500	38,100	40,000	42,000	44,100
All Other Operating	453,400	267,200	255,900	243,700	230,900	217,500
TOTAL OPERATING BUDGET	500,000	335,700	500,000	500,000	500,000	500,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 500,000	\$ 335,700	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000

Note: FY 2002 expenditures include encumbrances at 6/30/02.

INITIATIVE OVERVIEW

The Technology Transfer Initiative will help to further develop an integrated technology transfer program at ASU by focusing on technology marketing, licensing, and business development planning. The initiative contains several components that provide an integrated approach to enhancing technology transfer and local economic development.

Arizona's business and governmental leaders increasingly recognize the importance of building a more diverse, knowledge-based economy. The ASU Technology Transfer effort plays an important role in helping to achieve this goal and continues to expand the scope and impact of its technology transfer program. Faculty want to participate in the business opportunities associated with the inventions they create, with ASU and the commercial sector becoming more heavily involved in these new business opportunities and the resulting growth in economic development.

FY 2002 GOALS/OBJECTIVES

FY 2002 goals and objectives included:

- Encourage more awareness and invention disclosure activity from ASU researchers.
- Increase evaluation of new discoveries for technical viability and commercial potential.
- Invest in the development of selected new inventions that have commercial potential.
- Assist ASU startup companies in creating business plans for the commercialization of their inventions.
- Educate Arizona's private sector and investment community about technology transfer opportunities at ASU.
- Create a campus climate that fosters entrepreneurship.
- Employ a team of expert consultants to help assess and evaluate ASU technologies, establish market leads, and create business plans for commercializing innovations and technology.
- Fund proof of concept grants and further develop early stage university technologies.
- Further promote our technology marketing efforts by establishing an enhanced "electronic forum" for the promotion of technology transfer at ASU.
- Provide more comprehensive business development services to ASU inventors.
- Increase outreach activities to the business and economic development communities.

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
TECHNOLOGY TRANSFER

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REVISED EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003 PROJECTED</i>	<i>FY 2004 PROJECTED</i>	<i>FY 2005 PROJECTED</i>	<i>FY 2006 PROJECTED</i>
Return on Investment						
1. Value of startups to ASU	\$60K	\$51K	\$120K	\$240K	\$360K	\$540K
2. Products in marketplace	2	5	3	4	5	6
3. Value of products to ASU	\$120K	\$421K	\$420K	\$780K	\$1,200K	\$1,740K
Technology Transfer						
4. Invention disclosures	15	97	27	36	48	60
5. Patent applications	22	108	8	12	16	20
6. Patents	3	11	2	3	4	5
7. Startup companies	2	3	1	2	2	3
8. Fund proof of concept grants to faculty	5	6	5	5	5	5
9. Business plans written	2	2	3	4	5	6
10. Technology transfer portal inquiries from industry	5	1	10	15	20	25
11. Licenses/options signed (technologies adopted by industry)	2	9	3	4	5	6

FY 2002 RESULTS AND ACCOMPLISHMENTS

- Contracted with technology commercialization firm to help assess technologies and improve business development and legal decisions.
- Established relationships between ASU and the Arizona investment community. Thirty-seven investors attended individual conferences and 20 attended group sessions.
- Formed partnerships with the College of Business:
 - High Tech MBA Partnership that integrates ASU technologies as the subject of student team projects that includes the development of a business plan.
 - Master's Consulting Group contracts with the Office of Technology Collaborations and Licensing (OTCL) for market research services.
- Funded six proof of concept grants in science and engineering to help advance technologies that have potential for licensees and investors in commercial development. Five of the six awards were for the Proposition 301-related areas of Bioscience/Biotechnology, Advanced Materials for the New Economy, Information Science, and Manufacturing
- Established mentoring relationships for proof of concept principal investigators with local entrepreneurs and venture capitalists.
- Identified and coordinated activity with ASU entrepreneurial student groups.
- Enhanced outreach efforts with entrepreneurs, industry associations, economic development professionals, and service providers, including focus group discussions on the formation of the ASU Research and Technology Foundation. Our outreach efforts included 150 individual discussions and 190 attendees at conferences and group meetings.
- Established alliances with Arizona entrepreneurial groups, including The Indus Entrepreneur (TIE) and the Arizona Venture Capital Conference (AVCC).
- Designed and hosted entrepreneurial education workshops in conjunction with TIE and AVCC to educate and encourage interaction between the ASU and the entrepreneurial communities.
- Increased technology marketing efforts and provided a wide range of business development services to ASU entrepreneurs.
- Joined the Columbia-led International Innovation Initiative, a consortium of select academic institutions that bundles individual related technologies for marketing to industry.
- Enhanced ASU's visibility in web-based online technology marketing and licensing services through a contract with the Patent and License Exchange (PLX).

ARIZONA STATE UNIVERSITY MAIN
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ASSESSMENT - MORRISON INSTITUTE

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 100,000	\$ 100,000				
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 76,200	\$ 55,000				
ERE	23,800	12,200				
All Other Operating						
TOTAL OPERATING BUDGET	100,000	67,200	-	-	-	-
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 100,000	\$ 67,200	\$ -	\$ -	\$ -	\$ -

Note: FY 2002 expenditures include encumbrances at 6/30/02.

INITIATIVE OVERVIEW

The Morrison Institute is creating an annual assessment framework for the ASU Proposition 301 initiatives consistent with the ABOR-approved goals and objectives. The assessment will include research on "best practices" regarding similar technology/research project evaluations and the economic impact resulting from Proposition 301 activity.

FY 2002 OBJECTIVES

The FY 2002 objectives include:

- Identify best assessment practices research and designs which are relevant to Proposition 301 initiative goals and projects.
- Develop assessment criteria for ASU initiatives.
- Develop assessment report outline for aggregate ASU initiatives.
- Create a basic "context" document for each ASU initiative that relates initiative activities to economic scope.

ARIZONA STATE UNIVERSITY EAST
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
CAMPUS CAPITAL INFRASTRUCTURE DEVELOPMENT

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 1,400,000	\$ 1,400,000	\$ 2,000,000	\$ 2,300,000	\$ 2,300,000	\$ 2,300,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services						
ERE						
All Other Operating						
TOTAL OPERATING BUDGET	-	-	-	-	-	-
CAPITAL BUDGET						
Building Renovation						
Debt Service						
COPs - Lease Purchase Payment	\$ 1,400,000		\$ 2,000,000	\$ 2,300,000	\$ 2,300,000	\$ 2,300,000
TOTAL CAPITAL BUDGET	1,400,000	-	2,000,000	2,300,000	2,300,000	2,300,000
EXPENDITURES GRAND TOTAL	\$ 1,400,000	\$ -	\$ 2,000,000	\$ 2,300,000	\$ 2,300,000	\$ 2,300,000

INITIATIVE OVERVIEW

The ASU East Proposition 301 initiative funds \$27.5 million of Certificates of Participation (COPs) for infrastructure development, including multiple building renovations, campus infrastructure improvements, a new flightline facility for Aeronautical Management Technology flight programs, and a new campus student union. The building renovations will prepare academic space, including classrooms, faculty and staff offices, and student support services to meet anticipated growth. The infrastructure improvements continue the transition of the former Williams Air Force Base to an attractive university campus. The major projects include campus street and roadway improvements; new campus malls; lighting and emergency telephones; a new master irrigation system; and campus landscape improvements.

FY 2002 PROGRESS

The COPs were issued in June 2002 with the first payment due in December 2002.

ARIZONA STATE UNIVERSITY WEST
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
CLASSROOM LABORATORY / COMPUTER CLASSROOM II BUILDING AND CENTRAL PLANT EXPANSION

	<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
	<i>REV BUDGET</i>	<i>ACTUAL</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>	<i>BUDGET</i>
REVENUE	\$ 1,100,000	\$ 1,100,000	\$ 1,600,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services						
ERE						
All Other Operating						
TOTAL OPERATING BUDGET	-	-	-	-	-	-
CAPITAL BUDGET						
Building Renovation						
Debt Service						
COPs - Lease Purchase Payment	\$ 1,100,000	\$ -	\$ 1,600,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000
TOTAL CAPITAL BUDGET	1,100,000	-	1,600,000	1,800,000	1,800,000	1,800,000
EXPENDITURES GRAND TOTAL	\$ 1,100,000	\$ -	\$ 1,600,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000

INITIATIVE OVERVIEW

The ASU West Proposition 301 initiative funds \$21.6 million of Certificates of Participation (COPs) for two projects, a 104,400 gross square foot (GSF) Classroom 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 will add 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.

FY 2002 PROGRESS

The COPs were issued in June 2002 with the first payment due in December 2002.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ENVIRONMENTAL RESEARCH, DEVELOPMENT AND EDUCATION FOR THE NEW ECONOMY (ERDENE)

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 1,500,000	\$ 1,453,858	\$ 1,560,000	\$ 2,340,000	\$ 3,000,000	\$ 3,300,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 1,082,379	\$ 911,770	\$ 1,044,456	\$ 1,096,679	\$ 1,526,063	\$ 1,644,866
ERE	211,064	150,455	203,669	213,852	297,582	320,749
All Other Operating	206,557	212,735	311,875	229,469	236,355	394,385
TOTAL OPERATING BUDGET	1,500,000	1,274,960	1,560,000	1,540,000	2,060,000	2,360,000
CAPITAL BUDGET						
Building Renovation						
Debt Service				800,000	940,000	940,000
TOTAL CAPITAL BUDGET	-	-	-	800,000	940,000	940,000
EXPENDITURES GRAND TOTAL	\$ 1,500,000	\$ 1,274,960	\$ 1,560,000	\$ 2,340,000	\$ 3,000,000	\$ 3,300,000

INITIATIVE OVERVIEW

Throughout its history, Arizona's economy has been closely linked to the state's environment and natural resources. Rich mineral resources, a healthful climate, and wondrous landscapes have stimulated economic enterprises in our cities and from Yuma to Page. Development of higher education in Arizona has influenced, and been influenced by, these incredible resources. Leading academic programs in astronomy, forest science, hydrology, materials science, hospitality management, environmental engineering and technology, and others are directly related to the state's resources and economy. Research by The Morrison Institute and others demonstrates the importance of "quality of life" when business leaders choose where to invest, where to locate, and where to expand. Environmental Research, Development and Education for the New Economy (ERDENE), managed by the Center for Sustainable Environments, builds on Northern Arizona University's leadership, expertise, and collaborations in environmental and natural resources science, technology, and management. It is designed to accelerate Arizona's environmental business enterprises, to better understand and manage our critical resources, and to prepare Arizona's workforce for the many opportunities these represent.

Some benefits to the citizens of Arizona include:

- Ecological restoration projects such as developing solutions to the threat of catastrophic fires at the wildland/urban interface
- Leveraging additional resources from private, state, and federal sources
- New Economy business start-ups
- Economic development assistance to local governments in natural resource management
- Assisting existing business and local government through workforce training and development in environmental themes and skills
- A state-of-the-art environmental research and development facility
- Development of new courses and certificates in ecological restoration, conservation, and environmental sciences and engineering
- Preparation of baccalaureate, master, and doctoral students in the environmental professions

FY 2002 GOALS/OBJECTIVES

1. Organize and staff projects
2. Build on existing partnerships with business, education, government, and tribal entities
3. Develop new credit-bearing and workshop-type courses

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ENVIRONMENTAL RESEARCH, DEVELOPMENT AND EDUCATION FOR THE NEW ECONOMY (ERDENE)

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
	<i>REV EST</i>	<i>ACTUAL</i>				
Return on Investment						
1. Leveraged federal and state funds	\$4,500,000	\$5,525,000	\$4,275,000	\$4,275,000	\$5,699,000	\$6,508,000
2. Leveraged industrial funds	\$65,000	\$366,000	\$100,000	\$100,000	\$133,000	\$152,000
3. Leveraged other funds (private, etc.)	\$183,300	\$642,000	\$200,000	\$200,000	\$267,000	\$304,000
4. Other returns (presentations and publications)	10	121	120	120	130	135
Technology Transfer						
5. Products generated and in the marketplace	0					
6. Business spin-offs		1	1	1	1	2
7. Patent applications generated	0	1	1	1	1	2
8. Conferences sponsored		14	15	15	17	18
9. Business expansions	2	2	2	3	4	5
Workforce Contributions						
10. Graduate/postdoc students in pipeline or graduated	35	56	50	56	60	70
11. High-end baccalaureates in specific disciplines	23	38	33	38	45	50
12. Certificates granted	0	0	5	5	7	8
13. Undergrad students in pipeline		26	30	32	35	35
14. Continuing Education professionals		85	85	85	90	100
Specific Curriculum Innovations						
15. New programs such as Certificates (students)	5	3	5	6	6	8
16. Revised courses	5	10	6	6	8	9
17. New courses	5	2	7	10	10	13
Partnerships						
18. Community College 2+2 Programs	2	2	3	3	4	5
19. Tri-University (ASU, NAU, UA)	4	4	3	3	4	5
20. Industry/private sector collaborations	13	17	18	18	24	27
21. Community-based (including tribes)	8	34	25	30	30	40
22. Regional, nat'l, internat'l research and linkages	5	20	20	22	25	25

FY 2002 RESULTS AND ACCOMPLISHMENTS

The importance of these projects to Arizona's economy was highlighted by the tragedy of this summer's Rodeo-Chedeski fire. One of the projects in this initiative focuses on forest health and restoration. Other initiatives resulted in significant leverage funds, business spin-offs, and increased partnerships with government and business entities.

Outcomes include:

1. The funds provided to the Ecological Restoration Institute enabled NAU to contribute its share of funds toward securing an \$8,000,000 award from the federal government (these funds are not included in the above totals since they were acquired prior to the start of Proposition 301 funding). Another \$5,000,000 in grants was attracted through resources available through Proposition 301

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ENVIRONMENTAL RESEARCH, DEVELOPMENT AND EDUCATION FOR THE NEW ECONOMY (ERDENE)

2. This time-period saw one business expansion (wind-powered resources) and one business locating in Flagstaff (Flagstaff Farmer's Market) due to the support and services available to it through 301 funds, in addition to significant progress on several patentable ventures.
3. Over 20 graduate students received financial support (in exchange for research contributions) through 301 funds.
4. Several new courses were developed and presented, including "Community Genetics," "Renewable Energy Resources," and "Ecological Restoration Policy."
5. Short-courses and workshops were developed and presented to community professionals on topics such as Fire Ecology, Indigenous Mapping, and Food Sustainability.
6. Among the expanded partnerships developed during this period was one with the Babbitt Ranches which will result in mutual cooperation and opportunity with one of the most significant land partners in the state. This project will be supported with 301 funds in FY 2003.
7. ERDENE participants sponsored several major conferences and produced several published papers and presentations at conferences.
8. A new certificate, "Conservation Ecology," has been developed.

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
CAPITAL PROJECTS

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 300,000	\$ 290,771				
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 48,000	\$ 30,692				
ERE	8,880	5,482				
All Other Operating	243,120	55,285				
TOTAL OPERATING BUDGET	300,000	91,459				
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-				
EXPENDITURES GRAND TOTAL	\$ 300,000	\$ 91,459				

INITIATIVE OVERVIEW

The major focus of this project is planning for capital projects to be constructed in ensuing years. Debt service for these projects will be funded in full or in part with Proposition 301 collections. The two major projects involved are the construction of an Applied Research Building and a renovation of the 30+ -year-old Biology/Chemistry labs and classrooms.

The Applied Research Building will bring together researchers from a variety of sectors in a facility designed to maximize use of environmentally sensitive materials and operations through building techniques and site location. Building occupants may include the Environmental Restoration Institute and partners in the Center for Sustainable Environments, as well as other, primarily environmentally related entities. The renovation of the Biology/Chemistry labs and classrooms will enable NAU to produce graduates with current knowledge and skills in bio-technology as required by the New Economy.

FY 2002 GOALS/OBJECTIVES

This year's focus is on the Applied Research Building. Goals and objectives were:

1. Organize building planning group
2. Select site
3. Select building occupants
4. Begin efforts to secure public or private funding to augment Prop 301 dollars

NORTHERN ARIZONA UNIVERSITY
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
CAPITAL PROJECTS

PERFORMANCE MEASURES/DELIVERABLES	<i>FY 2002 REV EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Return on Investment						
1. Site selection	X	X				
2. Building occupants defined	X	partial				
3. "Green" consultant hired	X	X				
4. Charette for building needs held	X	X				
5. Identification of matching funds						
6. Architect hired						
7. Board approvals obtained						
8. Schematic drawings prepared						
9. Preparations made for bond issuance						
10. Building construction						
11. Planning for Biology/Chemistry renovations						
12. Board approvals obtained (Bio/Chem)						
13. Building renovations						

FY 2002 RESULTS AND ACCOMPLISHMENTS

Significant progress was made with low expenditures. Progress includes:

1. A "green" consultant was hired and, as per his recommendation, a building site was selected.
2. A charette involving both university and community members was held to define building needs.
3. A first round of proposals for building occupants was solicited and evaluated.
4. Working with the Northern Arizona Technology and Business Incubator, we made application for a \$4,000,000 grant from the Department of Commerce Economic Development Administration to assist with building planning and infrastructure. Notification on the success or failure of that application should come by the end of calendar year 2002.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
OPTICAL SCIENCE AND TECHNOLOGY

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$ 4,500,000	\$ 4,361,574	\$ 5,000,000	\$ 4,500,000	\$ 4,200,000	\$ 4,200,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 1,769,700	\$ 870,021	\$ 1,475,700	\$ 1,549,400	\$ 1,371,820	\$ 1,142,127
ERE	345,100	134,883	287,762	302,100	267,500	222,700
All Other Operating	1,385,200	843,009	2,236,538	1,648,500	1,560,680	1,835,173
TOTAL OPERATING BUDGET	3,500,000	1,847,913	4,000,000	3,500,000	3,200,000	3,200,000
CAPITAL BUDGET						
Building Renovation						
Debt Service	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
TOTAL CAPITAL BUDGET	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
EXPENDITURES GRAND TOTAL	\$ 4,500,000	\$ 2,847,913	\$ 5,000,000	\$ 4,500,000	\$ 4,200,000	\$ 4,200,000

INITIATIVE OVERVIEW

Products and services provided by the Optical Science and Technology project fall into three categories: (1) research and technology development focusing on three core technology groups within optics (photonics, imaging and sensors, and astronomical instruments and large telescopes); (2) workforce development activities; and (3) technology transfer and outreach activities.

(1) Research and Technology Development:

- The funding of research projects and/or gap funding to provide for prototyping and proof of concept regarding the following:
 - o Photonics – novel nanocomposite materials, devices, and optical systems.
 - o Imaging and Sensors – wide array of practical applications including ultraviolet and infrared sensors.
 - o Astronomical Instruments and Large Telescopes – new enterprises that define the next generation of optics for large telescopes in space.

(2) Workforce Development:

- Pima Community College will collaborate with The University of Arizona in the development of a new two-year degree program for optical technicians to work in the optoelectronic and optomechanical areas.
- Expansion of graduate and undergraduate Optics programs.
- UA educational programs to upgrade K-12 science education.
- The Professional Masters Degree Program of UA melds practical science education in mathematics, physics, chemistry, biochemistry, and others to practical business application.
- The Associates in Technology Program of UA's Berger Entrepreneurship Program allows technical students to pair up with business students for one year of curriculum and application of new business development and technology development.
- New short courses in optical science and technology will be developed at the UA specifically for industrial training purposes in the area of optical science and technology. These will be offered on a distance learning platform and can be delivered anywhere in Arizona. A novel approach using a web-based text is currently under development on the campus and will be incorporated into the proposed courses.
- Arizona high school teachers and students will be engaged in statewide continuing education seminars that will prepare teachers to teach optical science and conduct optics experiments in the classroom and will introduce students to various career opportunities with optical science education.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
OPTICAL SCIENCE AND TECHNOLOGY

3) Technology Transfer and Outreach:

- Faculty and staff will work closely with The University of Arizona's Office of Technology Transfer and the Arizona Optics Industry Association to identify research products that have potential for technology transfer. Periodic meetings will be held between University of Arizona faculty and staff and industrial partners to identify venture capital opportunities and to keep the enterprise solidly on track in its developmental New Economy goals.
- Increase licenses and spin-off companies in optics through the Office of Technology Transfer
- Establish technology outreach programs.
- Increase number of world-class faculty in Optics.
- Increase major Optics research projects.
- The Office of Technology Transfer and Berger Entrepreneurship Program offer a business plan development team to work with optics disclosed technologies. Optics business plans have seen great success through this program.

FY 2002 GOALS/OBJECTIVES

Mission - Create a university/industry alliance that supports the growth of an Optics cluster that is an engine for growth in optical science and technology. This initiative creates a broad multidisciplinary research and education program dealing with optical sciences and technology. It has profound and wide-ranging implications for the continued growth and development of optical science and technology in the New Economy of the state.

Goals - The goal of this initiative is to support the development of the New Economy in Arizona through an integration of academic and technical leadership in one of the foremost GSPED industries targeted for growth in Arizona. This initiative includes components of research and technology development, workforce development, and the provision of technology transfer and technology support for the Arizona Optics Industry Association (AOIA) companies.

<u>PERFORMANCE MEASURES/DELIVERABLES</u>		<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
		<i>REV EST</i>	<i>ACTUAL</i>				
1	Recruit world-class faculty experts	6	3*	4		2	2
2	Increase number of industrial affiliate optics companies	2	11	2	2	2	2
3	New spin-off companies in optics		2**	1			1
4	New federally funded major optics projects		2***	1	1	1	1
5	Number of additional graduate students in areas Related to Optics	9	30	3			
6	Number of additional undergraduate majors in areas related to optics	5	12****	5	10	10	15

* Four active searches.

** 1 Patent; 2 Licenses.

*** MURI and Keck Foundation.

**** ABET Approval of Optical Engineering Program.

FY 2002 RESULTS AND ACCOMPLISHMENTS

The TRIF funding in optics provided the expansion of the existing program and the initiation of new programs. Some of the first year highlights are:

- Initiating an annual International Conference on Photonics, a meeting with venture capitalists and optics entrepreneurs, and the Optics Valley Lecture Series.
- Hiring three new faculty members in key areas of need such as fiber optics, optical materials, and optical modeling.
- Doubling the number of new graduate students admitted to the Ph.D. program in Optics.
- Obtaining ABET accreditation of the Optical Engineering undergraduate degree program.
- Initiating the optics technician training program in collaboration with Pima Community College.
- Obtaining two new major research grants (>\$1M): an AFOSR MURI in high power fiber lasers and a Keck Foundation award for multiphoton spectroscopy.
- Creating two new start-up companies: one in micro-optics applied to pathology and one in organic photonic materials.
- Expanding the size of the Industrial Affiliates Program in Optics significantly.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
WATER, ECONOMIC DEVELOPMENT, AND SUSTAINABILITY

	FY 2002 REV BUDGET	FY 2002 ACTUAL	FY 2003 BUDGET	FY 2004 BUDGET	FY 2005 BUDGET	FY 2006 BUDGET
REVENUE	\$ 500,000	\$ 484,620	\$ 500,000	\$ 2,000,000	\$ 2,300,000	\$ 3,500,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 224,047	\$ 119,583	\$ 150,100	\$ 255,200	\$ 268,000	\$ 281,500
ERE	43,690	14,304	29,300	49,800	52,300	54,900
All Other Operating	232,263	57,514	320,600	1,695,000	1,979,700	3,163,600
TOTAL OPERATING BUDGET	500,000	191,401	500,000	2,000,000	2,300,000	3,500,000
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 500,000	\$ 191,401	\$ 500,000	\$ 2,000,000	\$ 2,300,000	\$ 3,500,000

INITIATIVE OVERVIEW

- The mission of the Water, Economic Development, and Sustainability Program (WEDSP) is to provide science-based technical, economic, legal, and policy expertise necessary for water development, use, and conservation in an increasingly urban state with sustained population growth.
- The infusion of Prop 301 monies will fill the gaps identified to maximize economic and educational impact and leverage existing strengths. Over 40 UA faculty and staff in the social and physical sciences recently declared water a primary area for research, teaching, and outreach. These faculty and staff include individuals from several key departments and colleges. What has been lacking in previous efforts is adequate funding for studying Arizona-specific problems, especially those that involve more than one discipline, and money for outreach and education.
- Many of the products associated with the research, outreach, and education efforts of the WEDSP are more in the nature of public rather than private goods. Ensuring safe and sustainable water supplies and better management of water demand are necessary to support continued economic development in Arizona.
- An important and unique feature of WEDSP is that it proposes broad, internally competitive programs in years 3 to 5 in the areas of water sustainability, water quality, water and the environment, water and society, water and the economy, and water resources and climate variability. A critical component is its strategy to obtain funds to supplement Prop 301 monies through government grant program funding, affiliate organization sponsorships, and sponsored research funding.

FY 2002 GOALS/OBJECTIVES

- The WEDSP fundamental goals are to strengthen research, outreach, and education efforts in the water resource 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.
- WEDSP is leveraging its strengths in academia, research, and local environmental technology industries to create several outcomes, including: practical education for grades K-12 to create general awareness of issues, problems, and career-related training; internationally recognized research and technology transfer initiatives; a thriving industry cluster, which includes both private sector and public center entities, supported by a skilled workforce that is educated at the University of Arizona and related programs; and 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 UA faculty and staff in water-related issues and support UA efforts to be a national and global leader in research, technology development, and economic development.
- Water is essential to the health and well-being of local industries and its citizenry, and WEDSP activities can assist in ensuring the long-term availability of water in the state for industrial, municipal, and other uses. The connection of academia and industry through this initiative will result in the following outcomes:
 - hydrology and related academic programs will provide a high-quality workforce for water resources companies and agencies;
 - the general business community can provide the University of Arizona funding for future research projects and internships to give students real-world science experience; and
 - sponsored research projects and initiatives produce new technologies, which fuel growth and in some cases provide for new companies and therefore new jobs.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
WATER, ECONOMIC DEVELOPMENT, AND SUSTAINABILITY

<u>PERFORMANCE MEASURES/DELIVERABLES</u>	<i>FY 2002</i> <i>REV EST</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Return on Investment						
1. Additional funding obtained	\$400,000	\$400,000	*	*	*	*
Economic Development						
2. Industry economic development activity support	*	*	*	*	*	*
3. Community/municipal economic development activity support	*	*	*	*	*	*
Workforce Contributions						
4. Increase in undergraduate employment/research opportunities	0	0	2	12	12	16
5. Increase in graduate employment/research opportunities	1	1	4	12	15	20
6. Increase in post-graduate employment/research opportunities	2	2	1	4	6	7
7. Number of new faculty experts attracted	1	1	*	*	*	*
Education/Outreach						
10. Statewide water conference	1	1	1	1	1	1
11. Expand WET and GLOBE programs	*	*	*	*	*	*
12. Interdisciplinary Curriculum Modules	*	*	*	*	*	*
13. Rural Water Centers	2	2	*	*	*	*

* Indicates metrics not yet available

FY 2002 RESULTS AND ACCOMPLISHMENTS

In FY 2002, \$500,000 in Prop 301 funds were budgeted for the WEDSP. Funds were distributed to four established water centers at the University of Arizona and to a joint water education program. The centers worked in collaboration with numerous private sector companies and government agencies. Prop 301 funds were leveraged by approximately \$400,000 in outside funds. The WEDSP goal of strengthening water resources research, education, and outreach were accomplished through the following activities:

- Regular coordination meetings of the directors of the four funded water centers
- Establishment of a joint water education program by the four funded water centers
- Hiring of a full-time instructional specialist, housed at the Maricopa County Cooperative Extension Service, to expand the water centers' educational programs into Maricopa County
- Hiring of a graduate student to support water education programs
- Development of high school interdisciplinary curriculum modules on water resources in a semi-arid environment
- Establishment of a middle school field trip site at Tohono Chul Park in Tucson
- Development of two rural water resource centers (Cochise and Yavapai Counties)
- Hiring of Associate Director for the Water Resources Research Center to increase UA involvement in state and regional water resources policy and economics
- Participation in research projects on municipal drinking water quality
- Development of a summer teachers' institute on water recycling by industry
- Collaboration with electronics industry on water recycling simulator technology and water conservation at industrial sites
- Formation of WEDSP Water Advisory Committee, made up of high-level representatives of major water entities and stakeholders, was initiated
- Statewide water conference on the recommendations of the Governor's Water Management Commission held on November 13, 2001

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
TECHNOLOGY TRANSFER INFRASTRUCTURE

	<i>FY 2002</i> <i>REV BUDGET</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i> <i>BUDGET</i>	<i>FY 2004</i> <i>BUDGET</i>	<i>FY 2005</i> <i>BUDGET</i>	<i>FY 2006</i> <i>BUDGET</i>
REVENUE	\$500,000	\$484,619	\$600,000	\$700,000	\$800,000	\$800,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$260,000	\$69,800	\$273,100	\$286,700	\$301,200	\$316,300
ERE	50,700	13,151	53,300	55,900	58,700	61,700
All Other Operating	189,300	272,781	273,600	357,400	440,100	422,000
TOTAL OPERATING BUDGET	500,000	355,732	600,000	700,000	800,000	800,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 500,000	\$ 355,732	\$ 600,000	\$ 700,000	\$ 800,000	\$ 800,000

INITIATIVE OVERVIEW

Products and services provided by TTIP fall into two primary categories: (1) improvements in technology transfer infrastructure at UA's Office of Technology Transfer (OTT) and (2) the formal involvement of UA's Office of Economic Development (OED) in creating viable channels for UA technology to be transferred through the proposed TechCluster Program.

(1) Technology Transfer Infrastructure

- Hiring of a full-time marketing director for the Office of Technology Transfer to build University and industry relationships and thereby create and maximize commercialization outcomes.
- Hiring of a patent/licensing specialist to more effectively and efficiently process UA developed technologies.
- Launch ongoing partnership and outreach initiatives under TTIP that will serve to coordinate disparate units to achieve common economic development goals:
 - o Provide a permeable interface between the worlds of academia and industry by organizing a series of forums and events to discuss topics of joint interest, e.g., technical innovations and access to them, workforce needs and curriculum development, etc.
 - o Serve a centralized coordinating function by partnering with other UA units, such as BPA and Office of Technology Transfer, Arizona State and Northern Arizona Universities, and other government and economic development organizations, to support the needs of Arizona's cluster organizations.
 - o Organize annual showcase events to highlight the many relationships and the interdependence between the University and high tech cluster organizations.
 - o Utilize the extensive network of relationships within Southern Arizona, Metropolitan Phoenix, and throughout the state to provide a wide variety of flexible partnering opportunities.
 - o Design and implement several information technology tools to facilitate the interconnection of UA technology transfer, business community, and industry development components. The AZTechCluster High Tech Web Directory and the BusinessLink Program Database (City of Tucson Office of Economic Development) are two such projects underway.
 - o Leverage the Professional Masters Degree Program of UA. This program melds practical science education in mathematics, physics, chemistry, biochemistry, and others to practical business application.
 - o Leverage the Associates in Technology Program of UA's Berger Entrepreneurship Program in business plan development for UA technologies. This program allows technical students to pair up with business students for one year of curriculum and application of new business development and technology development.
 - o Leverage the facilities and expertise of the Tucson Technology Incubator and the UA Science and Technology Park to mobilize businesses for launch.

UNIVERSITY OF ARIZONA
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
TECHNOLOGY TRANSFER INFRASTRUCTURE

- (2) TechCluster Program: Core program elements include two targeted industry studies and three industry directories, or equivalent projects, building on a decade of direct and related expertise.
- Utilize targeted industry studies to feature global-to-local industry and market insights coupled with an in-depth examination of cluster-related University assets--human, programmatic, and physical. Similar UAOED studies were catalysts in the creation of Arizona's optics and bioindustry clusters.
 - Leverage UAOED expertise in U.S. and international cluster development theory to provide strategic planning and best practice support for the Arizona cluster organizations.
 - Use research results to develop and interface multiple industry databases, provide web access, and collaborate with other sites and organizations.
 - Develop an annual "state of the clusters" benchmarking report, the centerpiece of a major all-cluster event showcasing the industries' growth and accomplishments over the prior year.
 - Design-in program flexibility to address the research and analytical needs of the cluster organizations and the state's economic development community; has the capacity to increase the number of annual projects, depending on the availability of non-university resources beyond the core budget.
 - Provide an otherwise unavailable industry information resource that will support innumerable grant applications and project proposals by companies, cluster, and economic development organizations, and University applicants.

FY 2002 GOALS/OBJECTIVES

The goal of TTIP is to significantly increase the level of technology transfer from the UA to industries, with a special emphasis on supporting GSPED/GTSPED cluster companies. The major high tech GTSPED clusters that will directly benefit from these projects are: Optics; Plastics & Advanced Composite Materials; Life Sciences; Environmental Technology; Industry & Aerospace; and Software Information Industry. State-supported university/industry partnerships for technology transfer have been identified as an important ingredient in the New Economy, and at least 36 states have initiated programs of this type. Currently, there is no state money supporting technology transfer at UA. This project will give UA an active role in the state's economic development agenda. This will be achieved by expanding the infrastructure that supports technology transfer at the UA. The Governor's task force Arizona Partnership for the New Economy (APNE) has strongly recommended that an initiative of this type be established.

<u>PERFORMANCE MEASURES/DELIVERABLES</u>			<i>FY 2002</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
			<i>REV EST</i>	<i>ACTUAL</i>				
1	Patent applications		57	50	69	83	100	120
2	Patents issued		17	7	21	25	30	36
3	Spin-off companies		3	8	4	5	6	8
4	Invention disclosures		128	88	154	185	222	266
5	Licenses/options		53	18	64	77	92	110
6	Licensing income		\$575,515	\$647,400	\$720,645	\$900,804	\$1,126,007	\$1,407,509

FY 2002 RESULTS AND ACCOMPLISHMENTS

The major accomplishments for this year include:

- Completing the Industry Clusters Status Report to be used as a benchmark for future success in this area.
- Hiring a new Director of the Office of Technology Transfer and hiring a new marketing person for the office.
- Activating the technology transfer advisory committee and two intellectual property analysis committees.
- Significantly increasing the number of spin-off companies and the licensing revenue.

ARIZONA BOARD OF REGENTS CENTRAL OFFICE
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ARIZONA REGENTS UNIVERSITY

	FY 2002 REV BUDGET	FY 2002 ACTUAL	FY 2003 BUDGET	FY 2004 BUDGET	FY 2005 BUDGET	FY 2006 BUDGET
REVENUE	\$ 2,000,000	\$ 1,938,478	\$ 2,100,000	\$ 2,205,000	\$ 2,315,000	\$ 2,431,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 70,000	\$ 59,098	\$ 150,000	\$ 200,000	\$ 200,000	\$ 220,000
ERE	18,000	11,716	37,500	50,000	50,000	55,000
Professional Services/Consultants	750,000	-	312,933	202,000	202,000	205,500
All Other Operating	123,500	44,765	169,000	164,100	198,600	198,600
Subtotal Operating	961,500	115,579	669,433	616,100	650,600	679,100
AID TO OTHERS:						
(Grants: e-Education & Seamless Student Services)	1,038,500					
Tri-University Master of Engineering Grant		250,000	250,000	250,000	-	-
ARU Campus Coordinators Salary & Start Up		22,009	140,400	147,400	151,106	151,106
UA Nursing PhD Grant		100,000	100,000	100,000	-	-
ASU & NAU RN to BSN Grant		200,000	200,000	200,000	-	-
Scholar's Portal Grant		270,050	95,500	195,800	-	-
Math & Science Teacher Preparation Grant		250,224	250,224	250,224	-	-
Tri-University Master of Engineering Supplemental Grant		250,000	-	-	-	-
Online Tutoring Grant (contingent on matching federal funds)		17,550	23,236	44,635	82,470	
Subtotal Board-Approved Grants	1,038,500	1,359,833	1,059,360	1,188,059	233,576	151,106
* New Program Initiative #1			250,000	250,000	250,000	250,000
* New Program Initiative #2			121,207	150,841	250,000	250,000
* New Program Initiative #3					250,000	250,000
* New Program Initiative #4					250,000	250,000
* New Program Initiative #5					250,000	250,000
* New Program Initiative #6					180,824	250,000
* New Program Initiative #7						100,794
Subtotal New Initiatives	-	-	371,207	400,841	1,430,824	1,600,794
TOTAL OPERATING BUDGET	2,000,000	1,475,412	2,100,000	2,205,000	2,315,000	2,431,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 2,000,000	\$ 1,475,412	\$ 2,100,000	\$ 2,205,000	\$ 2,315,000	\$ 2,431,000

* These funds will be allocated to future projects, subject to Board approval.

INITIATIVE OVERVIEW

Arizona Regents University, from its statewide perspective, can:

- combine areas of strength within each of the state universities to make available unique programs that represent multi-university efforts and capabilities;
- create 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;
- minimize the price of education by reducing the need for a student residence near a campus and by reducing interruption of an individual's paid employment; and
- emphasize areas of study that support lifelong career advancement.

ARIZONA BOARD OF REGENTS CENTRAL OFFICE
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
ARIZONA REGENTS UNIVERSITY

FY 2002 GOALS/OBJECTIVES

1. To expand access to postsecondary education to Arizona citizens by overcoming barriers to time and place at an affordable cost.
2. To support anytime, anyplace academic degree programs, articulation, and seamless student services.

	<i>FY 2002</i> <i>REV EST</i>	<i>FY 2002</i> <i>ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Return on Investment						
Funds leveraged		\$193,375	\$89,070	\$88,643		
Workforce Contributions						
Number of courses provided		520	546	573	602	630
Number of certificate and degree programs provided		9 / 14	11 / 15	13 / 16	15 / 17	17 / 18
Number of enrollments		12,353	14,200	16,330	18,780	21,600
Grant funds distributed to universities		\$1,378,394	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000
Curriculum Innovations						
Number of coordinated student services provided		Not available	5	6	7	8
Number of faculty trained		Not available	Develop baseline	100	200	300
Number of faculty offering distance learning courses		Not available	+/- 400	412	424	436

FY 2002 RESULTS AND ACCOMPLISHMENTS

The creation of Arizona Regents University (ARU) is well underway with development primarily focused on two fronts: academic program development and establishment of needed student services.

ARU awarded grants for the development of academic programs in the following areas:

- Mathematics and Science Teacher Preparation
- Tri-University Master of Engineering Program
- Tri-University Master of Engineering Program Supplemental Grant
- Nursing Ph.D. Program
- Nursing R.N. to B.S.N. Program

ARU awarded grants to develop student services for the following:

- Scholars Portal – Online Library Services
- Tri-University Online Tutoring Services
- On-site ARU Campus Coordinators
- Contract with Academic Program Articulation Steering Committee (APASC) for the development of electronic transfer and articulation capabilities among the universities

ARU's Business Plan outlines activities for the coming years with major emphasis on identifying and creating the necessary package of student services. Current research will indicate areas of additional learning needs, policy concerns, and baseline data needs. At present, there are over 520 distance learning courses available with over 12,000 students taking advantage of the benefits offered through distance learning. Targets for growth will be established over the coming year, and programs under development will be monitored for progress.

ARIZONA BOARD OF REGENTS CENTRAL OFFICE
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
REGENTS INNOVATION FUND

	FY 2002 REV BUDGET	FY 2002 ACTUAL	FY 2003 BUDGET	FY 2004 BUDGET	FY 2005 BUDGET	FY 2006 BUDGET
REVENUE	\$ 1,000,000	\$ 969,239	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
EXPENDITURES						
OPERATING BUDGET						
Personal Services	\$ 8,333	\$ 3,113	\$ 15,200	\$ 15,504	\$ 15,814	\$ 16,130
ERE	1,749	744	3,800	3,876	3,953	4,032
All Other Operating	3,500	2,469	4,000	4,200	4,500	4,700
Subtotal Operating	13,582	6,326	23,000	23,580	24,267	24,862
AID TO OTHERS:						
Board-Approved LCE Grants	500,000	567,107	525,000	551,250	578,812	607,752
Subtotal Board-Approved Grants	500,000	567,107	525,000	551,250	578,812	607,752
*Regents Innovation Initiative #1	486,418					
*Regents Innovation Initiative #2			452,000			
*Regents Innovation Initiative #3				425,170		
*Regents Innovation Initiative #4					396,921	
*Regents Innovation Initiative #5						367,386
Subtotal New Initiatives	486,418	-	452,000	425,170	396,921	367,386
TOTAL OPERATING BUDGET	1,000,000	573,433	1,000,000	1,000,000	1,000,000	1,000,000
CAPITAL BUDGET						
Building Renovation						
Debt Service						
TOTAL CAPITAL BUDGET	-	-	-	-	-	-
EXPENDITURES GRAND TOTAL	\$ 1,000,000	\$ 573,433	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000

* Grants and contracts for unforeseen needs and contingencies, subject to Board approval.

INITIATIVE OVERVIEW

The purpose of the Regents Innovation Fund is to function as a reserve for addressing unforeseen needs and contingencies by providing limited-duration grants for high-priority projects consistent with the goals of Proposition 301 and the Technology and Research Initiative Fund. The major need addressed in FY 2002 was for grants to support workforce development through learner-centered academic programs. The purpose of the LCE grants is to support the Regents' goal of institutionalizing learner-centered education throughout the university system. The grants provide a source of support for new, innovative academic projects and unforeseen, short-term needs that fall within the framework of learner-centered education.

BUDGET PROJECTIONS

Personal and ERE projections increase at a rate of 2% each year. Other operating items increase by 5%.

For 2002, the Regents approved a one-time increase of \$73,433 over the planned \$500,000 allocation for Learner-Centered Education Grants. Four additional grants were funded with this money. Line items for subsequent years for Learner-Centered Grants are based on \$500,000 plus inflation at 5%.

ARIZONA BOARD OF REGENTS CENTRAL OFFICE
TECHNOLOGY & RESEARCH INITIATIVE FUND (TRIF) - FY 2002 RESULTS
REGENTS INNOVATION FUND

FY 2002 GOALS/OBJECTIVES

The goal for the Regents Innovation Fund for FY 2002 was to identify and respond to emerging needs related to the purposes of the TRIF fund. Two areas of need were identified--learner-centered education and evaluation of the TRIF program. Objectives to support this goal were to establish a grant program to support learner-centered education and to establish a Business Advisory Team to advise the Board on the evaluation of the TRIF program. Both objectives have been accomplished.

Detailed objectives for the evaluation of the TRIF program are reflected in the charge to the Business Advisory Team:

- develop business plans for TRIF initiatives according to a business plan model
- develop a comprehensive system for evaluation of the TRIF program
- develop a review process for the universities' general education programs

Work was begun in FY 2002 on each of these objectives.

Detailed objectives for the Learner-Centered Education Grants are reflected in the four categories of grants considered critical to the full implementation of learner-centered education throughout the university system:

- support faculty professional development
- support course/program modification or development
- support research on learner-centered education
- support assessment of learner-centered education at the course or program level

Priority for the FY 2002 grant cycle was give to tri-university grants which addressed faculty development in learner-centered education.

PERFORMANCE MEASURES/DELIVERABLES

FY 2002 *FY 2002*
REV EST *ACTUAL* *FY 2003* *FY 2004* *FY 2005* *FY 2006*

(Measures below are for Learner-Centered Education Grants only, as the Business Advisory Team has not yet recommended grants or contracts for evaluation of the TRIF program.)

	<i>FY 2002 REV EST</i>	<i>FY 2002 ACTUAL</i>	<i>FY 2003</i>	<i>FY 2004</i>	<i>FY 2005</i>	<i>FY 2006</i>
Workforce Contributions						
Students affected by LCE grant projects	14,000	14,000	10,000	10,000	10,000	10,000
Curriculum Innovations						
Faculty addressing curriculum through LCE grants	188	188	150	150	150	150
Courses being revised through LCE grants	95	95	80	80	80	80

FY 2002 RESULTS AND ACCOMPLISHMENTS

(Results below are for the Learner-Centered Education Grants project.)

- 100 proposals were received
- 20 grants were approved for funding
- Of those funded, one project was funded at the maximum \$100,000 level: a tri-university project for professional development.
- An additional one-time increase of \$73,433 was approved by the Board to fund additional grants rated highly by the review panel. Estimates for performance measures for subsequent years are based on \$500,000 and 4 fewer grants.

Projects are funded from April 1, 2002, through June 30, 2003. Approximately half of the funds were released during FY 2002. The remainder will be released during FY 2003 upon receipt of the mid-project progress reports required of each grantee.

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
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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:

1. 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;
2. The requested duration of the proposed project or activity;
3. Proposed detailed performance measures, desired outcomes, and proposed methodology for evaluating progress in attaining the desired outcomes; and
4. 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.

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

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.
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.