TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
ANNUAL REPORT

ARIZONA BOARD OF REGENTS

Arizona State University
Northern Arizona University
The University of Arizona

For the fiscal year ended June 30, 2005,

as required by A.R.S. §15-1648(D).

September 1, 2005

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September 1, 2005

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

Dear Governor Napolitano, President Bennett, and Speaker Weiers:

On behalf of the Arizona Board of Regents, Arizona State University, Northern Arizona University, and The University of Arizona, and in accordance with A.R.S. §15-1648(D), I am pleased to submit the attached annual report for the Arizona Board of Regents Technology and Research Initiative Fund (TRIF) for the fiscal year ended June 30, 2005. TRIF is continuously appropriated to the Arizona Board of Regents with Education 2000 (Proposition 301, November 2000) sales tax revenues pursuant to A.R.S. §42-5029(E)(2).

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

This annual report provides budget and expenditure information on each TRIF initiative. These initiatives are consistent with statutory language calling for TRIF funds to support university research, development, and technology transfer related to the knowledge-based global economy; to expand access to baccalaureate or post-baccalaureate education for time-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.

Our FY 2005 TRIF budget supported initiatives in biosciences and biotechnology, information science and technology, and access and workforce development, as well as optical sciences, water sustainability, and environmental research and development. These programs have been designed and implemented to better position Arizona as a major player in the global marketplace. Detailed business plans for each initiative have been developed and are available on the ABOR website.

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

Sincerely,

Joel Sideman
Executive Director

c: The Honorable Jan Brewer, Secretary of State
Ms. GladysAnn Wells, Director, Arizona State Library, Archives and Public Records
Members of the Arizona Board of Regents
Dr. Michael Crow, President, Arizona State University
Dr. John Haeger, President, Northern Arizona University
Dr. 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, 2005

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For the fiscal year ended June 30, 2005

EXECUTIVE SUMMARY

- Education 2000 (Proposition 301), passed by Arizona voters in November 2000, approved a 0.6 percent increase in the state sales tax to be dedicated to the universities, the community colleges, and K-12. Collection of the tax began on June 1, 2001.

- A.R.S. §15-1648 establishes the Technology and Research Initiative Fund (TRIF) to receive Proposition 301 revenue and gives the Arizona Board of Regents the authority to administer the fund. To date, $198,050,229 in revenue from Proposition 301 have been received into TRIF.

- In March 2001 the Arizona Board of Regents approved a five-year TRIF budget plan for FY 2002-2006, along with guidelines for implementation of the budget. The Board annually approves a revised budget and detailed performance measures for each initiative.

- A.R.S. §15-1648(D) requires the Board to submit to the Governor and the Legislature by September 1 of each year a report to include "a description of the amount and duration of each new award distributed and a description of the purpose and goals for each award. For existing awards, the Arizona Board of Regents shall use a detailed set of performance measures to determine the overall effectiveness of each award."

- All FY 2005 TRIF-funded initiatives, with the exception of Regents Innovation Fund projects which are responsive to emerging issues, were "existing awards," i.e., they were continuing projects included in the five-year budget plan approved by the Regents in March 2001. Detailed business plans for each initiative have been developed by the universities and central office and are available on the Arizona Board of Regents web site at www.abor.asu.edu.

- The FY 2005 TRIF revenue budget totaled $52,365,000. Total actual TRIF revenue received during FY 2005 was $56,973,042, resulting in overrealized revenue of $4,608,042 (8.8%).

- For purposes of this annual report, revenue consists of actual receipts into TRIF for August 2004 through June 2005 plus an estimated amount for July 2005 revenue. This estimate was required to record the June 30, 2005, year-end revenue accrual and to prepare this report on a timely basis. Actual TRIF revenue for the 12-month

period August 2004 through July 2005 was $56,703,802, or $4,338,802 (8.3%) over the budgeted amount. This overrealized revenue has been allocated to the universities for use on the approved TRIF projects.

- Total TRIF expenditures in FY 2005 were $53,170,725, representing 69.8% of total revenue available (including carryforward amounts from the prior year).

- 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 2005.

- TRIF budget guidelines adopted by the Board call for full expenditure of FY 2005 funds by December 31, 2005. 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 central office 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.

- 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 2005, 8.3% of TRIF expenditures were used for capital projects.

ARIZONA UNIVERSITY SYSTEM
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL / FY 2006 BUDGET
SYSTEM SUMMARY

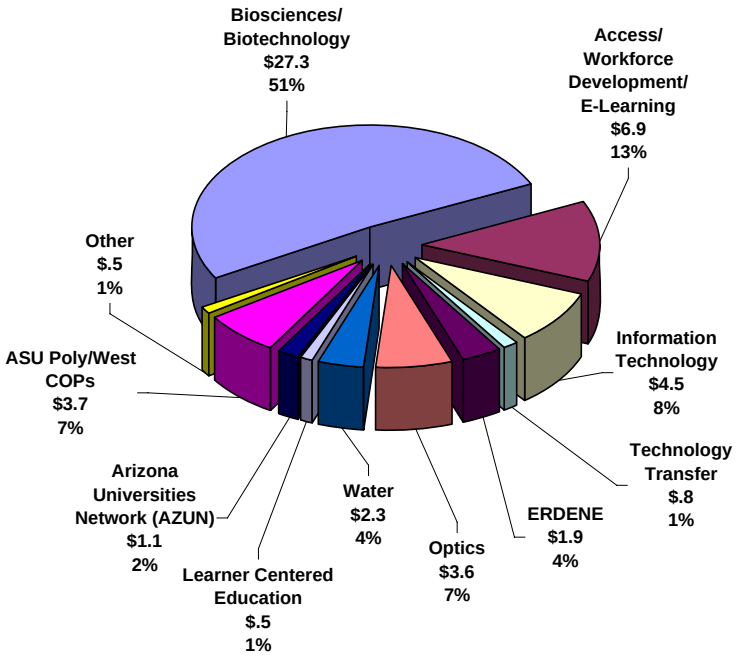
	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carryforward	$ 19,171,550	$ 19,171,550	$ 3,133,126	$ 22,749,566
TRIF Revenue	50,050,000	54,561,402	53,363,800	52,891,900
Arizona Universities Network (AZUN) Revenue	2,315,000	2,411,642	2,031,000	2,431,000
TOTAL REVENUE	**$ 71,536,550**	**$ 76,144,594**	**$ 58,527,926**	**$ 78,072,466**
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 29,007,929	$ 23,779,172	$ 23,072,413	$ 34,984,500
ERE	6,616,859	5,971,234	5,028,555	8,788,197
All Other Operating	18,555,929	14,269,632	19,718,031	20,275,377
Grants/Projects	2,245,321	1,322,588	1,926,727	1,926,727
TOTAL OPERATING BUDGET	**$ 56,426,038**	**$ 45,342,625**	**$ 49,745,726**	**$ 65,974,801**
CAPITAL BUDGET				
Building Renovation	5,993,500	1,117,600	2,000,000	3,175,965
Debt Service	3,920,000	3,000,000	3,000,000	5,140,000
ASU Poly/W COPs Lease Purchase Payment	3,779,900	3,708,500	3,782,200	3,781,700
TOTAL CAPITAL BUDGET	**$ 13,693,400**	**$ 7,826,100**	**$ 8,782,200**	**$ 12,097,665**
EXPENDITURES GRAND TOTAL	**$ 70,119,438**	**$ 53,168,725**	**$ 58,527,926**	**$ 78,072,466**
SUMMARY BY PROGRAM AREA				
Biosciences/Biotechnology		$ 27,289,590		$ 34,810,584
Access/Workforce Development/E-Learning		6,898,255		10,175,273
Information Technology		4,474,739		4,481,805
Technology Transfer		762,795		1,260,048
ERDENE		1,940,724		2,607,129
Optics		3,627,920		5,269,662
Water		2,340,296		4,644,514
Learner Centered Education		462,250		820,393
Arizona Universities Network (AZUN)		1,145,996		4,962,942
ASU Polytechnic/West COPs		3,708,500		3,781,700
Capital Projects (NAU)		28,201		3,474,445
Other		489,460		1,783,971
EXPENDITURES GRAND TOTAL		**$ 53,168,725**		**$ 78,072,466**

ARIZONA UNIVERSITY SYSTEM

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 BUDGET / ACTUAL
SYSTEM SUMMARY BY PROGRAM AREA

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*
GRAND SYSTEM SUMMARY		
ARIZONA STATE UNIVERSITY		
Biodesign Institute at Arizona State University	$ 25,417,200	$ 20,260,500
ASU Polytechnic COPs	2,116,100	2,064,700
ASU West COPs	1,663,800	1,643,800
Subtotal	**29,197,100**	**23,969,000**
NORTHERN ARIZONA UNIVERSITY		
Access and Workforce Development	4,371,712	3,130,274
Biosciences/Biotechnology	968,490	763,748
E-Learning	2,818,826	1,823,843
ERDENE (Environmental)	2,274,412	1,940,724
Capital	2,046,800	28,201
University Initiatives	826,047	375,054
Arizona Universities Network (AZUN)	1,815,542	312,579
Subtotal	**15,121,829**	**8,374,422**
UNIVERSITY OF ARIZONA		
Anyplace Access for Arizonans	1,103,886	1,081,762
Workforce Development: Educator Development	989,172	862,376
BIO5 Institute	7,764,660	6,220,377
Technology Transfer Infrastructure	1,060,372	762,795
Optical Sciences & Technology	4,566,298	3,627,920
Az Center for Information Science & Technology (ACIST)	4,987,541	4,350,084
Water Sustainability Program	2,737,798	2,302,796
Venture Fund	-	-
Subtotal	**23,209,727**	**19,208,110**
ABOR CENTRAL OFFICE		
Arizona Universities Network (AZUN)	1,086,040	833,417
Regents Innovation Fund	1,504,742	785,777
Subtotal	**2,590,782**	**1,619,194**
EXPENDITURES GRAND TOTAL	**$ 70,119,438**	**$ 53,170,726**

FY 2005 SYSTEM ACTUAL TRIF EXPENDITURES
($ in millions)



SUMMARY	
Biosciences/Biotechnology	$ 27,289,590
Access/Workforce Development/E-Learning	6,898,255
Information Technology	4,474,739
Technology Transfer	762,795
ERDENE	1,940,724
Optics	3,627,920
Water	2,340,296
Learner Centered Education	464,250
Arizona Universities Network (AZUN)	1,145,996
ASU Polytechnic/West COPs	3,708,500
Capital Projects (NAU)	28,201
Other	489,460
EXPENDITURES GRAND TOTAL	**$ 53,170,726**

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ARIZONA STATE UNIVERSITY
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL / FY 2006 BUDGET
SUMMARY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carryforward	$ 8,733,000	$ 8,842,729	$ 35,900	$ 7,056,900
TRIF Revenue	20,500,000	22,183,171	21,946,300	21,874,400
TOTAL REVENUE	**$ 29,233,000**	**$ 31,025,900**	**$ 21,982,200**	**$ 28,931,300**
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 8,697,600	$ 9,136,400	$ 6,528,100	$ 11,060,100
ERE	1,843,100	2,048,700	1,346,000	2,364,100
All Other Operating	10,033,000	8,107,800	10,325,900	11,666,600
TOTAL OPERATING BUDGET	**$ 20,573,700**	**$ 19,292,900**	**$ 18,200,000**	**$ 25,090,800**
CAPITAL BUDGET				
Building Renovation	$ 4,843,500	$ 967,600	$ -	$ 58,800
Debt Service	-	-	-	-
COPs Lease Purchase Payment	3,779,900	3,708,500	3,782,200	3,781,700
TOTAL CAPITAL BUDGET	**$ 8,623,400**	**$ 4,676,100**	**$ 3,782,200**	**$ 3,840,500**
EXPENDITURES GRAND TOTAL	**$ 29,197,100**	**$ 23,969,000**	**$ 21,982,200**	**$ 28,931,300**
SUMMARY BY INITIATIVE				
ARIZONA STATE UNIVERSITY TEMPE	$ 25,417,200	$ 20,260,500	$ 18,200,000	$ 25,149,600
ARIZONA STATE UNIVERSITY POLYTECHNIC	2,116,100	2,064,700	2,116,600	2,116,100
ARIZONA STATE UNIVERSITY WEST	1,663,800	1,643,800	1,665,600	1,665,600
EXPENDITURES GRAND TOTAL	**$ 29,197,100**	**$ 23,969,000**	**$ 21,982,200**	**$ 28,931,300**

ARIZONA STATE UNIVERSITY

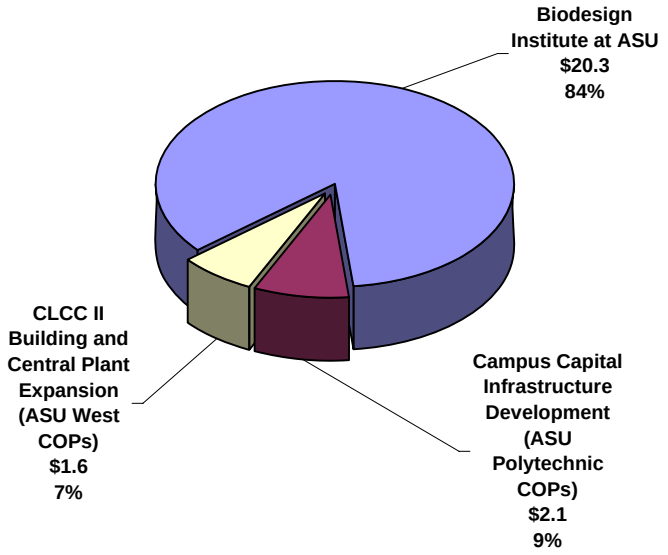
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 BUDGET / ACTUAL

SUMMARY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*
REVENUE		
Carryforward	$ 8,733,000	$ 8,842,729
TRIF Revenue	20,500,000	22,183,171
TOTAL REVENUE	**$ 29,233,000**	**$ 31,025,900**
EXPENDITURES		
OPERATING BUDGET		
Personal Services	$ 8,697,600	$ 9,136,400
ERE	1,843,100	2,048,700
All Other Operating	10,033,000	8,107,800
TOTAL OPERATING BUDGET	**20,573,700**	**19,292,900**
CAPITAL BUDGET		
Building Renovation	4,843,500	967,600
Debt Service	-	-
COPs Lease Purchase Payment	3,779,900	3,708,500
TOTAL CAPITAL BUDGET	**8,623,400**	**4,676,100**
EXPENDITURES GRAND TOTAL	**$ 29,197,100**	**$ 23,969,000**
SUMMARY BY INITIATIVE		
Biodesign Institute at Arizona State University	$ 25,417,200	$ 20,260,500
Campus Capital Infrastructure Development (ASU Polytechnic C	2,116,100	2,064,700
CLCC II Building and Central Plant Expansion (ASU West COPs	1,663,800	1,643,800
EXPENDITURES GRAND TOTAL	**$ 29,197,100**	**$ 23,969,000**

FY 2005 ASU ACTUAL TRIF EXPENDITURES
($ in millions)



ARIZONA STATE UNIVERSITY TEMPE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL / FY 2006 BUDGET

BIODESIGN INSTITUTE AND CAPACITY BUILDING PROJECT INVESTMENTS

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carryforward	$ 8,517,200	$ 8,517,200	$ -	$ 6,949,600
TRIF Revenue	16,900,000	18,692,900	18,200,000	18,200,000
TOTAL REVENUE	**$ 25,417,200**	**$ 27,210,100**	**$ 18,200,000**	**$ 25,149,600**
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 8,697,600	$ 9,136,400	$ 6,528,100	$ 11,060,100
ERE	1,843,100	2,048,700	1,346,000	2,364,100
All Other Operating	10,033,000	8,107,800	10,325,900	11,666,600
TOTAL OPERATING BUDGET	**$ 20,573,700**	**$ 19,292,900**	**$ 18,200,000**	**$ 25,090,800**
CAPITAL BUDGET				
Building Renovation	$ 4,843,500	$ 967,600	$ -	$ 58,800
Debt Service	-	-	-	-
COPs Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	**$ 4,843,500**	**$ 967,600**	**$ -**	**$ 58,800**
EXPENDITURES GRAND TOTAL	**$ 25,417,200**	**$ 20,260,500**	**$ 18,200,000**	**$ 25,149,600**

Note: FY 2005 expenditures include encumbrances at 6/30/05. The FY 2006 carryforward is net of 6/30/05 encumbrances.

INITIATIVE OVERVIEW

ASU's TRIF funding portfolio is grouped into two main initiatives: a) the Biodesign Institute at Arizona State University and b) Capacity Building Project Investments.

The Biodesign Institute at Arizona State University is ASU's flagship initiative and is focused on use-inspired, collaborative research targeting the understanding of biological systems. The research agenda emphasizes translation (the application of discoveries to commercial uses and societal benefits) and impact (the search for innovations that will significantly improve human health and quality of life). The Biodesign Institute is integrating research in systems biology and neurobiology with advances in computing, optoelectronics, biomimetic materials and directed molecular assembly. The central theme linking these diverse fields is the comprehension of the structural and functional architectures in biological systems and identifying how these design rules can lead to the prevention and cure of diseases, overcoming the pain and limitations of injury, sustaining our environment, and securing a safer world. The Institute also provides a primary vehicle for strengthening regional research capacity, capabilities and facilities, increasing the total external funding for bioscience/biotech/biomedical research coming to Arizona.

The Biodesign Institute serves as ASU's formal link to the important regional bioscience research institutions which include: Translational Genomics Research Institute (TGen), Mayo Clinic, Barrow Neurological Institute (BNI), Banner Health, and the Carl Hayden VA Hospital. The Biodesign Institute also provides the link with the Arizona Biomedical Collaborative (ABC) and will assist in the programming of this Phoenix facility and in forging the connection between the ABC research activities with the Biodesign research programs.

ARIZONA STATE UNIVERSITY TEMPE
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL / FY 2006 BUDGET
BIODESIGN INSTITUTE AND CAPACITY BUILDING PROJECT INVESTMENTS

INITIATIVE OVERVIEW (continued)

The Biodesign Institute is organized into a growing number of networked research and design centers that link ASU collaborators with affiliated institutions. Centers in operation at the beginning of the fiscal year included:
• Infectious Diseases and Vaccines (IDV) – research focuses on selective pathogens, identifying vaccine antigens and using transgenic plants as low-cost, efficient production systems for orally active antigens.
• Bio-Optical Nanotechnologies (BON) – focuses on working to integrate biomolecular sciences with materials engineering and solid-state electronics to develop the next generation of biosensors, implants, pharmaceuticals, biomaterials, and nanoscale power sources.
• Single Molecule Biophysics (SMB) – focuses on examining the physical processes on which life is based using the simplest model systems at the molecular level to develop new health care tools.
• Applied NanoBioscience (ANB) – focuses on applying advances in nanoscience, molecular biology and genomics to a new generation of biological tools to understand disease at the molecular level.
• Neural Interface Design (NID) – focuses on developing novel approaches to evaluate and rehabilitate motor function disorders due to central nervous system disease or injury through neural interface and brain control technologies.
• Rehabilitation Neuroscience & Rehabilitation Engineering (RNRE) – focuses on designing and developing technologies to counteract the effects of neurological disorders, enhancing therapeutics and devices for improved health, fitness and assistance with daily activities.
• Evolutionary Functional Genomics (EFG) – focuses on examining how genes, gene families and genomes of model organisms change over time and elucidate the gene interaction networks responsible for development of a single fertilized egg cell in a complex adult animal.

In FY 2005, the Center for Glycoscience and Technology (GT) was formed, evolving from the Center for Protein and Peptide Therapeutics (PPT). It focuses on developing novel drugs and treatments for a broad spectrum of diseases including stroke, heart disease, and cancer. The former center launched a spin-out company that is developing engineered proteins and peptide analogs of clinically-important biomolecules, resulting in the organizational and program changes to this center.

In FY 2005, three new centers were added through recruitment of eminent scientists:
• Center for Bioelectronics and Biosensors (BB) – (Director: Joseph Wang) – focuses on the field of nanobioelectronics, interfacing nano and biomaterials with electronic transducers with the goal of designing efficient electronic transduction of biorecognition events for the development of biosensing devices for environmental, security, and clinical monitoring.
• Center for Environmental Biotechnology (EB) – (Director: Bruce E. Rittmann) – focuses on developing microbiological systems that capture or develop renewable resources and also prevent or clean up environmental pollution.
• Center for Innovations in Medicine (IM) – (Director: Stephen A. Johnston) – focuses on drug targeting, vaccine technology, cancer treatment and pre-symptomatic diagnosis of cancer and other diseases through biosignatures to develop next-generation solutions to today's basic medical problems.

Also in FY 2005, the Cancer Research Institute (CRI) was brought under the umbrella of the Biodesign Institute to build greater synergies in ASU's cancer research. Scientists in CRI search for powerful, natural anti-cancer compounds that may already exist in our environment.

The Capacity Building Project Investments are focused primarily on: a) application of information technology as an enabler for economic growth in all areas; b) development of advanced materials for the new economy; and, c) wireless technology needs for the advancement of new technology in areas ranging from biomedical to communications to environmental applications.

The Institute for Computer Information Science and Engineering (InCISE) provides the leadership for the information technology investments. InCISE is charged with identifying opportunities for transdisciplinary research resulting from the integration of the latest developments in computer science (e.g., data acquisition, analysis, management, security, modeling, and visualization,) with other research areas. InCISE has identified synergies with researchers in cognitive, biosciences, disabilities studies, physical ands social sciences, enterprise computing and linguistics. The goal is to leverage selective investments in collaborative, interdisciplinary projects to build partnerships between researchers, improve visibility with funding agencies, and produce successful larger scale collaborative proposals that would not be possible using traditional approaches emphasizing individual researchers.

INITIATIVE OVERVIEW (continued)

InCISE was formed as a confederation of five core research groups funded for 3 to 5 years: the Center for Cognitive Ubiquitous Computing (CUbiC); Intelligent Information Integration (ET-I3); Information Assurance (IA); the Partnership for Research in Spatial Modeling (PRISM); and, the Software Factory (SF). It also includes three affiliated research groups: the Center for Research in Arts, Media and Engineering (AME); the Center for Advanced Business through Information Technology (CABIT); and, the Consortium for Embedded and Internetworking Technologies (CEINT). InCISE is housed in the Brickyard, a 130,000 square foot academic and research space, providing the facilities and environment for ASU to build top-ranked, world-class programs.

In the advanced materials capacity building project initiative, ASU is working to 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. Examples include novel microelectronic (low power, high power, high temperature, and/or high frequency), microfluidic, and bio devices integrated into microsystems for high-value-added applications in the information technologies, health care, threat detection, transportation, processing, and manufacturing industries. In addition, the development of novel flexible displays and polymer-based electronics is a feature of this initiative.

The wireless technology capacity building project initiative, Wireless Integrated Nano Technology (WINTech)/ConnectionOne) is focused on research and development related to wireless systems, integrated circuits (IC) and their applications. The center offers diverse expertise to develop a fully integrated complete end-to-end system in the next generation of wireless and remote control/sensing applications in the biosciences, telecommunications, and remote sensing industries. WINTech has established strong ties with government and industrial funding agencies (NSF, DARPA, ONR, and AFRL), while ConnectionOne is a National Science Foundation Industry/University Cooperative center with strong industry ties. Currently, ConnectionOne has over 18 industrial members.

To complement the Biodesign and Capacity Building Project Initiatives, and to help bring all ASU discoveries to the new economy, investments continue to support technology venturing. Arizona Technology Enterprises (AzTE), ASU's technology venturing company, was formed in July 2003 to take a more "market-oriented" approach to technology transfer. AzTE is a separate 501(c)(3) company staffed with industry professionals with expertise in technology licensing, product development and venture capital. The organization focuses on starting new companies and licensing and building technology alliances based on ASU technology. AzTE also facilitates relationships between ASU and industry for new technology development. The key design elements of AzTE include: active technology and idea harvesting; innovation screening; portfolio marketing and management; comprehensive commercialization partnership creation; and, entrepreneurial training, assistance, and mentorship for faculty engaged in start-up activities.

FY 2005 GOALS/OBJECTIVES

Biodesign Institute at Arizona State University

The following goals were adopted by the Biodesign Institute for FY2005:

• Increase the governmental and private funding of research connected with the Institute and its associated Research and Design Centers by about 25% annually.
• Complete, occupy, and efficiently use the Biodesign Institute facilities, including the new Biodesign Institute Buildings A and B, and the Cancer Research Institute Building. (Completed Phase I, Building A, December 2004; Complete Phase II, Building B, by January 2006.)
• Increase the rate of intellectual property development and technology transfer from Institute associated research programs by 20% annually (doubling every 4 years) as measured by invention disclosures, patents applied for and issued, start-up companies, and licenses signed.
The Institute set out to accomplish these goals through the following:
• Organize the Biodesign Institute into a growing number of networked Research and Design Centers.
• Identify and pursue major (>$1 Million), collaborative federal research grant opportunities.
• Establish and strengthen partnerships with industry, institutions, and foundations. Become a proactive partner with the U of A and NAU in the Arizona Biomedical Collaborative and expand collaborations with TGen, Mayo Clinic, BNI and Banner Health.

ARIZONA STATE UNIVERSITY TEMPE
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL / FY 2006 BUDGET
BIODESIGN INSTITUTE AND CAPACITY BUILDING PROJECT INVESTMENTS

FY 2005 GOALS/OBJECTIVES (continued)

• Hire new ASU faculty in strategic areas of targeted opportunity. Hire senior faculty members to ensure early funding success and junior faculty members who will receive mentoring by a first-class group of successful role models.
• Hire research staff in research programs and core facilities that complement the strategic thrusts of the Institute and improve our probabilities for funding in critical areas.
• Utilize the capital funding appropriation authorized by the Arizona legislature to construct building B of the Biodesign research complex. Have facility ready for occupancy by January 2006.
• Maintain a close, collaborative connection with Arizona Technology Enterprises (AzTE) and their managers for Health Sciences and Information Technologies to promote Biodesign intellectual property development and marketing.
• Maintain a close connection with the MacroTechnology Works (MTW) at ASU. MTW is a new organizational mechanism that will enable marketable science, starting with collaboration and moving through the necessary steps of conceptualization and testing, prototype production, etc., leading to a refined manufacturing-ready product.

Capacity Building Project Investments (CBPI's)

Goals for the CBPI's include:

• Identify opportunities where recent IT developments can enable the successful growth of novel transdisciplinary areas.
• Enhance interdisciplinary collaborative research in nanotechnology and advanced materials between departments and across colleges.
• Strengthen WINTech/ConnectionOne in three key areas: Radio & Wireless Integrated Circuits; MEMS & Bio-MEMS & Bio-Electronics; and, Alternative Energy Systems/Systems.
• Identify research partnerships and pursue opportunities with high potential that lead to large-scale funding.

Technology Transfer/Technology Venturing

• Establish operational objectives for the organization, as well as processes for IP evaluation and management, a focused communication and marketing strategy, and forms and policies for the organization.
• Begin building relationships with industry (local and national), and with major Arizona research institutions.

ARIZONA STATE UNIVERSITY TEMPE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL / FY 2006 BUDGET

BIODESIGN INSTITUTE AND CAPACITY BUILDING PROJECT INVESTMENTS

PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 Actual*	*FY 2003 Actual*	*FY 2004 Actual*	*FY 2005 Proposed*	*FY 2005 Actual*	*FY 2006 Revised*
Return on Investment						
1. External funding: new federal awards	$10.86M	$7.34 M	$21.34 M	$29.00 M	$31.18 M	$37.40 M
2. and donations	$1.06M	$1.29 M	$5.75 M	$5.53 M	$4.70 M	$5.60 M
3. Value of new startups to ASU	$51 K	$92 K	$1.40 M	$2.20 M	$2.53 M	$3.00 M
4. New products in marketplace	5	3	5	8	10	10
5. Value of new products to ASU	$421 K	$400 K	$1.40 M	$2.20 M	$2.53 M	$3.00 M
Work Force/Access Contributions						
1. Increase in number of teachers who graduate with math/science certification	9	0	7	25	(14)	8
2. New post-doctoral students in pipeline	5	48	44	32	64	37
3. New post-doctoral students entering workforce	0	19	24	24	32	26
4. New graduate students in pipeline	29	120	106	101	121	112
5. Graduate students earning degrees and		33	67	67	63	74
6. Undergraduate students with research experience	39	84	139	139	177	170
7. Growth in CS/CSE Graduates	-21	10	37	40	53	50
Curriculum Innovations						
1. Tier 1 Introduction to Information Technology for all students - Completed FY 2002	Completed					
2. Tier 2 package of 3 courses	Partially		Partially		Partially	
3. Tier 3 concentration for BIS degree		Partially	Partially		Partially	
4. BS Applied Computing (ASU West) Begins Fall 2005	Approved					X
5. High school students completing software	88	227	200	75		N/A
6. Internships w/ industry	32	88	136	128	71	75
7. New courses introduced (Bio, Info, Nano)	4	6	16	18	13	24
Technology Transfer						
1. New software packages distributed	0	6	10	15	2	N/A
2. Form industry-university nationwide research		In Progress	4	2	2	2
3. Create research road map in collaboration with industry	In Progress	Completed	4	4	1	4
4. Invention disclosures	97	91	98	120	166	144
5. Patent applications	108	106	128	140	168	154
6. Patents	11	17	18	20	41	20
7. Startup companies	3	3	4	4	4	4
8. Fund proof of concept grants to faculty	6	6	5	14	9	11
9. Business plans written	2	6	9	10	8	11
10. Technology transfer portal inquiries from industry	1	13	15	15	20	15
11. Licenses/options signed (technologies adopted by industry)	9	20	24	28	28	32

ARIZONA STATE UNIVERSITY TEMPE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL / FY 2006 BUDGET

BIODESIGN INSTITUTE AND CAPACITY BUILDING PROJECT INVESTMENTS

Partnerships						
1. New research collaborations with industry and national laboratories	9	13	19	19	14	26
Economic Development						
1. Companies identifying ASU as a factor for relocating or expanding in AZ	2 large	0 large 2 small	1 large 3 small	1 large 3 small	7 large 3 small	4 large 4 small

FY 2005 RESULTS AND ACCOMPLISHMENTS

Biodesign Institute at Arizona State University

- New federal awards and industrial contracts for Biodesign in FY 2005 were $7.4M and $1.3M respectively.
- In FY 2005 there were 54 multi-investigator proposals that requested total awards of more than $1M submitted by Biodesign researchers. 16 of the proposals requested >$3M. Eight of the proposals are collaborations with one or more research institutions outside of ASU.
- Significant grant awards recently received include: a $14.8 million award to Dr. Roy Curtiss to fight pneumonia in the developing world; a $1 million award to Dr. Bertram Jacobs for smallpox virus defense; and, a $2 million award to Drs. Ranu Jung and James Abbas for a Magnetic Resonance Imaging facility for animal research.
- Three internationally recognized scientists were recruited to lead new research centers: Dr. Joseph Wang; Dr. Stephen A. Johnston; and, Dr. Bruce Rittmann -- Dr Rittmann is a member of the National Academy of Engineering. Other Biodesign Institute related hires include 5 senior faculty, 6 junior faculty, and 13 research faculty. Over 149 faculty and staff researchers are now affiliated with the Biodesign Institute.
- Dr. George Poste, the Director for the Institute, was named 2004 Scientist of the Year by R&D Magazine.
- Important support offices were established and management positions filled within the institute including: Chief Operations Officer; Director of Strategy and Research Alliances; Director of Communications; Director of Development; and, Director of Government and Industry Liaison.
- Phase I, Building A of the Biodesign Institute was ready for occupancy December 2004 and eight centers and the Biodesign administration moved into the building. Phase II, Building B is under construction and scheduled for occupancy in January 2006. The Research Support Services #5 animal facility was occupied in January 2005. Capital commitments are in place for the construction of the Arizona Biomedical Collaborative building adjacent to TGen at the downtown Phoenix Bioscience Center.

In FY 2005, six new patents were issued in the biomedical/biosciences. Biodesign Institute researchers filed 10 new patent applications, 22 provisional patents, and 34 new invention disclosures. Nanobiomics, a Biodesign company spin-out from last year, was recognized as the Arizona start-up company of the Year by the Arizona BioIndustry Association.

Capacity Building Project Investments

- Over $36M in collaborative research proposals were facilitated by InCISE in FY 2005. Awards of almost $5M were received. These proposals covered topics ranging from information security to the development of devices for the blind, artificial intelligence/learning, brain imaging, and visualization.
- ASU's Center for Cognitive Ubiquitous Computing (CUbiC) was named Innovator of the Year for Academia for its iCARE research project at the Governor's Celebration of Innovation Awards held at the Arizona Biltmore.

FY 2005 RESULTS AND ACCOMPLISHMENTS (continuted)

• The Consortium for Embedded Systems funded coursework and collaborated with the Fulton School of Engineering Center for Professional Development to deliver the first online Executive Masters in Embedded Systems degree program. The first course cycle was launched in March 2004 and continued throughout FY 2005.
• Programmable Metallization Cell (PMC) memory inventions were licensed via ASU spin-out Axon Technologies Corp. to Infineon Technologies, who are pushing ahead with commercialization efforts. In addition, briefings on PMC-related work were delivered at NEC, Sony, and Toshiba, with additional strong interest expressed by Elpida and Hitachi.
• An NIH R01 grant for the development of sensors used to detect biomarkers in whole blood was received. NASA provided additional funding for using the sensor to determine progress in wound healing.
• ASU and LBNL submitted a $15 million NIH P01 center grant for protein dynamics in technology.
• MacroTechnology Works (MTW) was formed to leverage ASU's investment in the $45M/5-year Army Flexible Display Center grant and facility. MTW will provide a vehicle to take new discoveries rapidly to the prototype production phase and will work closely with each of ASU's TRIF initiatives.
• Hired five new faculty to bring the total core number of WINTech faculty to 12. This increase in faculty was accompanied by an increase in research proposals of 300% from $5M in FY03 to over $15M in FY05. There were corresponding increases in funded research and center expenditures by 250% from $2M in FY03 to over $5M in FY05.
• Connection One Industrial Membership grew from six company members in 2003 to 18 industrial members in 2005.
• The wireless communication initiative received over $3.5M in federal grants and over $2.5M in equipment and CAD donations from companies.
• A state of the art wireless design and testing facility was completed and used to designed and test six new integrated circuits for the funding agencies.
• CRESMET (Center for Research on Education in Science, Mathematics, Engineering and Technology) became the nation's second highest grant-winner in NSF's Education and Human Resources funding programs - second only to the University of Wisconsin-Madison.
• Through its NSF awards, CRESMET is engaged in three long-term projects: Project Pathways, a Math and Science Partnership conducted with high schools in four regional school districts; the Teacher Professional Continuum, a research investigation into the teaching of pre-calculus mathematics; and, the Rational Number Project, a longitudinal study of children's emerging understanding of number concepts.
• This year CRESMET also launched a new alternative certification program called SCISM - Summer Certification Institute in Secondary Mathematics. SCISM prepares academically strong math majors to earn a secondary teaching certificate while completing their B.S. degrees. CRESMET secured $86,000 in funding from the Boeing Company to support the program's development. Recruiting teachers with strong mathematics backgrounds is an urgent goal in both Arizona and the nation.

Technology Transfer/Technology Development

• Closed 28 technology deals and started 4 new companies.
• Hired world-class management team and Board of Directors.
• Established operating and IP policies.
• Filed 120 invention disclosures and 140 patent filings - received 20 patents.
• Funded 14 proof-of-concept grants.

ARIZONA STATE UNIVERSITY POLYTECHNIC

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL / FY 2006 BUDGET

Campus Capital Infrastructure Development

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carryforward	$ 95,700	$ 95,700	$ (20,400)	$ 31,000
TRIF Revenue	2,000,000	2,000,000	2,137,000	2,085,100
TOTAL REVENUE	**$ 2,095,700**	**$ 2,095,700**	**$ 2,116,600**	**$ 2,116,100**
EXPENDITURES				
OPERATING BUDGET				
Personal Services				
ERE				
All Other Operating				
TOTAL OPERATING BUDGET	**$ -**	**$ -**	**$ -**	**$ -**
CAPITAL BUDGET				
Building Renovation				
Debt Service				
COPs Lease Purchase Payment	2,116,100	2,064,700	2,116,600	2,116,100
TOTAL CAPITAL BUDGET	**$ 2,116,100**	**$ 2,064,700**	**$ 2,116,600**	**$ 2,116,100**
EXPENDITURES GRAND TOTAL	**$ 2,116,100**	**$ 2,064,700**	**$ 2,116,600**	**$ 2,116,100**

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

INITIATIVE OVERVIEW

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

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

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ARIZONA STATE UNIVERSITY WEST

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL / FY 2006 BUDGET

Classroom Laboratory / Computer Classroom II Building and Central Plant Expansion

	FY 2005 ACTUAL	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carryforward	$ 120,100	$ 120,100	$ 56,300	$ 76,300
TRIF Revenue	1,600,000	1,600,000	1,609,300	1,589,300
TOTAL REVENUE	**$ 1,720,100**	**$ 1,720,100**	**$ 1,665,600**	**$ 1,665,600**
EXPENDITURES				
OPERATING BUDGET				
Personal Services				
ERE				
All Other Operating				
TOTAL OPERATING BUDGET	**-**	**-**	**-**	**-**
CAPITAL BUDGET				
Building Renovation				
Debt Service				
COPs Lease Purchase Payment	$ 1,663,800	$ 1,643,800	$ 1,665,600	$ 1,665,600
TOTAL CAPITAL BUDGET	**1,663,800**	**1,643,800**	**1,665,600**	**1,665,600**
EXPENDITURES GRAND TOTAL	**$ 1,663,800**	**$ 1,643,800**	**$ 1,665,600**	**$ 1,665,600**

INITIATIVE OVERVIEW

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

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

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NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

SUMMARY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 4,308,522	$ 4,308,522	$ 1,349,282	$ 6,527,900
TRIF Revenue	9,350,000	10,281,221	9,817,500	9,817,500
Total Revenue	$ 13,658,522	$ 14,589,743	$ 11,166,782	$ 16,345,400
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 7,235,507	$ 5,300,624	$ 5,033,866	$ 8,706,645
ERE	1,760,540	1,431,497	1,073,801	2,274,961
All Other Operating	2,390,240	1,329,723	3,059,115	2,246,629
TOTAL OPERATING BUDGET	$ 11,386,287	$ 8,061,843	$ 9,166,782	$ 13,228,235
CAPITAL BUDGET				
Building Renovation	$ 1,000,000	$ -	$ 2,000,000	$ 3,117,165
Debt Service	920,000	-	-	-
COP's Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	$ 1,920,000	$ -	$ 2,000,000	$ 3,117,165
EXPENDITURES GRAND TOTAL	$ 13,306,287	$ 8,061,843	$ 11,166,782	$ 16,345,400
AZUN	$ 1,815,542	$ 312,579	$ 3,059,979	$ 4,562,942
SUMMARY BY INITIATIVE				
Access and Workforce Development	4,371,712	3,130,274	2,905,637	4,422,684
Bioscience/Biotechnology	968,490	763,748	806,400	1,087,633
E-Learning	2,818,826	1,823,843	2,268,000	3,478,110
ERDENE (Environmental)	2,274,412	1,940,724	2,076,480	2,607,129
Capital	2,046,800	28,201	2,357,282	3,474,445
University Initiatives	826,047	375,054	752,983	1,275,399
EXPENDITURES GRAND TOTAL	$ 13,306,287	$ 8,061,843	$ 11,166,782	$ 16,345,400

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

NORTHERN ARIZONA UNIVERSITY

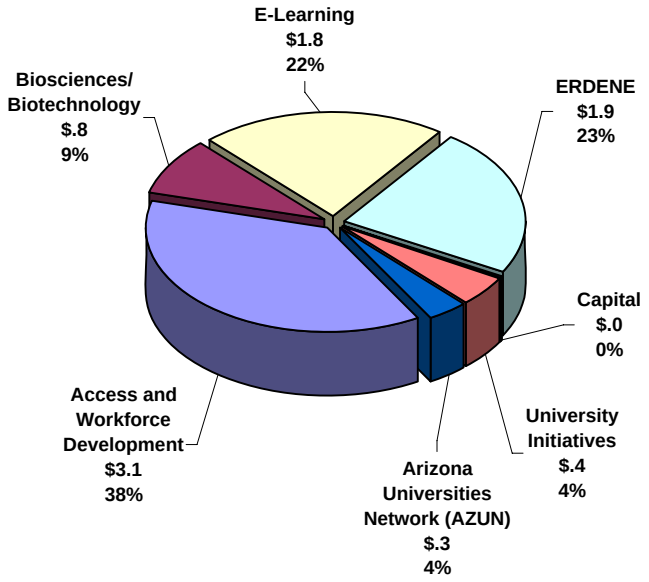
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 BUDGET / ACTUAL

SUMMARY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*
REVENUE		
Carry Forward	$ 4,308,522	$ 4,308,522
TRIF Revenue	9,350,000	10,281,221
TOTAL REVENUE	**$ 13,658,522**	**$ 14,589,743**
EXPENDITURES		
OPERATING BUDGET		
Personal Services	$ 7,235,507	$ 5,300,624
ERE	1,760,540	1,431,497
All Other Operating	2,390,240	1,329,723
TOTAL OPERATING BUDGET	**11,386,287**	**8,061,843**
CAPITAL BUDGET		
Building Renovation	1,000,000	-
Debt Service	920,000	-
COPs Lease Purchase Payment	-	-
TOTAL CAPITAL BUDGET	**1,920,000**	**-**
EXPENDITURES GRAND TOTAL	**$ 13,306,287**	**$ 8,061,843**
Arizona Universities Network (AZUN)	**$ 1,815,542**	**$ 312,579**
SUMMARY BY INITIATIVE		
Access and Workforce Development	$ 4,371,712	$ 3,130,274
Biosciences/Biotechnology	968,490	763,748
E-Learning	2,818,826	1,823,843
ERDENE (Environmental)	2,274,412	1,940,724
Capital	2,046,800	28,201
University Initiatives	826,047	375,054
Arizona Universities Network (AZUN)	1,815,542	312,579
EXPENDITURES GRAND TOTAL	**$ 15,121,829**	**$ 8,374,422**

FY 2005 NAU ACTUAL TRIF EXPENDITURES
($ in millions)



NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ACCESS/WORKFORCE DEVELOPMENT

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 1,604,439	$ 1,604,439	$ -	$ 1,517,047
TRIF Revenue	2,767,273	3,042,882	2,905,637	2,905,637
Total Revenue	$ 4,371,712	$ 4,647,321	$ 2,905,637	$ 4,422,684
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 2,889,754	$ 1,965,921	$ 1,254,000	$ 2,930,000
ERE	793,254	519,716	260,252	635,200
All Other Operating	688,704	644,637	1,391,385	857,484
TOTAL OPERATING BUDGET	$ 4,371,712	$ 3,130,274	$ 2,905,637	$ 4,422,684
CAPITAL BUDGET				
Building Renovation	-	-	-	-
Debt Service	-	-	-	-
COP's Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	$ -	$ -	$ -	$ -
EXPENDITURES GRAND TOTAL	$ 4,371,712	$ 3,130,274	$ 2,905,637	$ 4,422,684

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
ACCESS/WORKFORCE DEVELOPMENT

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 Extended Programs/Distance Learning System is an investment in the New Economy that directly supports the identified needs of the Governor's Task Force on Education, the Arizona Partnership for a New Economy, and the ABOR guidelines. This initiative will:

1. Address the teacher shortage: emphases 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 post-baccalaureate 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 2005 GOALS/OBJECTIVES AND RESULTS/ACCOMPLISHMENTS

I. Programs

Goals/Objectives

The program strategy for years three through five (FY2004 through FY2006) was to:

1. Evaluate programs, discontinue the unsuccessful programs and continue successful programs, and seek modest increases in enrollment.
2. Use incremental funding to increase student capacity in existing non-TRIF funded programs.

Results/Accomplishments

NAU has maintained and in many cases expanded the number of students in programs, added a few new programs, and added new students in existing programs. We are very pleased with the progress.

A. Education

Goals/Objectives

1. Master of Education in Elementary/Secondary Education with Certification -- Incremental enrollment sought through additional cohorts.
2. Master of Education in Educational Technology -- Incremental enrollment sought.
3. English as a Second Language Endorsement -- Convert program to the web. Incremental enrollment sought.
4. Science/Math education -- Develop new marketing strategies to reach more teachers in Arizona and the Southwest. Incremental enrollment sought.
5. Education Foundations courses -- Increase number of web-based sections offered. Incremental enrollment sought.
6. Bachelor of Science in Elementary Education -- Incremental enrollment sought through additional cohorts.
7. Bacher of Science/Master of Education in Career and Technical Education -- Incremental enrollment sought.

Results/Accomplishments

1. Master of Education in Elementary/Secondary Education with Certification -- Activity in year four included: four elementary education cohorts in Tucson; four elementary education and two secondary education cohorts in Phoenix; and one elementary education cohort in Yuma (20-25 students each cohort). Four additional elementary education cohorts are scheduled to begin in Phoenix in Summer 2005 along with an additional elementary cohort in Yuma in Fall 2005. A secondary education cohort of 18 students from the Phoenix area graduated in FY 2005.
2. Master of Education in Educational Technology and Certificate Program -- A total of 75 students received degrees. Both of these programs are offered entirely on the Web with a combined enrollment of 178 students.
3. English as a Second Language Endorsement -- All courses have been converted to the Web. Program enrollment increased by 21 students to a total of 57.
4. Science/Math education -- Enrollments continued to be small despite targeted marketing strategies that included e-marketing to science teachers, program fliers mailed to science teachers in Phoenix area high schools, and attending the state science teacher conference to market the courses. The decision was made in Fall 2004 to discontinue the program with the last round of classes offered in Spring 2005.
5.Education Foundations courses -- Increased number of sections offered from seven in FY 2004 to twelve in FY 2005. Enrollment of 229 students
6. Bachelor of Science in Elementary Education -- Three cohorts in Tucson with a cohort recruited in Phoenix for Fall 2005. Total of 105 students enrolled. Hired second faculty member.
7. Bachelor of Science and Master of Education in Career and Technical Education -- These were new TRIF programs for 2004, with the master's degree entirely on the Web and the bachelor's degree delivered primarily face-to-face in Phoenix and Tucson. The master's degree had an enrollment of 33 students and the bachelor's degree had 83 students. Ten students have received degrees. Three bachelor's cohorts are scheduled to begin in the Phoenix area during Summer 2005.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
ACCESS/WORKFORCE DEVELOPMENT

B. Health Professions

Goals/Objectives

1. Accelerated Bachelor of Science in Nursing; Registered-Nurse to Bachelor of Science in Nursing -- Seek incremental student enrollment.
2. Master in Nursing -- Incremental enrollment sought.
3. Bachelor of Science in Dental Hygiene -- Expand program. Incremental enrollment sought.
4. Bachelor of Applied Science in Health Promotion; Bachelor of Science in Health Promotion -- Incremental enrollment sought.

Results/Accomplishments

1. Accelerated Bachelor of Science in Nursing -- Thirty-four students were active in the plan in FY 2005, an increase of twenty-one students.
2. Registered Nurse to Bachelor of Science in Nursing -- Entire curriculum except for clinical experiences is delivered on-line. The number of students in the plan increased by 41.
3. Master of Nursing -- The number of students in the plan increased from 21 to 28. A search for a full-time faculty member is in progress to help grow the program.
4. Bachelor of Science in Dental Hygiene -- Enrollment declined slightly from 131 to 126 students. Seventeen students graduated. This program has national interest and enrollment..
5. Bachelor of Applied Science in Health Sciences and Bachelor of Science in Health Sciences -- Enrollment expanded from 132 students to 175. Students came from 18 different states, two military facilities, and one national country (Canada). The number of degrees awarded has increased each year: two in FY 2003, six in FY 2004, and sixteen in FY 2005. The program name has changed from Health Promotion to Health Sciences as part of college restructuring.

C. Business and Public Service

Goals/Objectives

1. Master of Administration -- Incremental enrollment sought.
2. Bachelor of Applied Science in Computer Technology -- Incremental enrollment sought.
3. Bachelor of Arts in Liberal Studies in Public Agency Service/Bachelor of Applied Science in Public Agency Service, and support courses for all BAILS/BAS -- Develop and teach Web courses. Incremental enrollment sought.
4. Culinary Arts for Managers Certificate -- Finish development and offer certificate.
5. Graphical Information Systems (GIS) post-baccalaureate certificate and workshops -- Incremental enrollment sought.

Results/Accomplishments

1. Master of Administration -- Number of admitted students grew from 34 to 181 in the newly named Master of Administration program. An additional 41 students are in the Master of Science in Management program, which has been replaced by the Master of Administration to meet AACSB accreditation requirements. There are six emphasis areas: Educational Leadership; Professional Writing; Project Management; Public Management; Health Promotion; and a Custom Emphasis Option. A half-time director position was established and filled. Exploration is underway to look at revising certain emphases to better meet student interests.
2. Bachelor of Applied Science in Computer Technology -- Program designed as a follow-up to community college degree in Computer Technology. Main focus has been on establishing articulation agreements with community colleges. Enrollment for this program was 28 students. Eight students graduated.
3. Bachelor of Arts in Liberal Studies in Public Agency Service/Bachelor of Applied Science in Public Agency Service, and support courses for all BAILS/BAS and liberal studies students -- Enrollment in required courses in specialization, emphasis, and core areas increased by 88 students to a total of 174 students. Most students are adult, part-time students. Degrees have been awarded to 37 students since the creation of the program.
4. Culinary Arts for Managers Certificate -- The certificate was not offered during AY 04/05 due to university restructuring and internal reallocatior of school resources. A commercial website (http://az-hospitality.org) has been purchased to allow future marketing of the degree in both VHS and DVD format. Marketing approach will focus on delivery of training materials through distance education platforms to offer the product to any interested party.
5. Graphical Information Systems (GIS) post-baccalaureate certificate -- Enrollment has increased by 7 students from FY 2004 to a total of 23. Six certificates have been awarded since Spring 2002.

II. Infrastructure

Goals/Objectives

A. Student Services -- Meet demand for toll-free phone and web access for students. Continue to advise students at a distance, incrementally add staff as needed to meet demand.

B. Technical Infrastructure -- Maintain high-bandwidth Internet connections and modems in rural sites. Complete the addition of three new digital ITV classrooms (West Maricopa, Tucson, Globe/Miami).

C. Faculty support -- Develop and teach web courses with a combination of TRIF and Distance Learning Services stipends.

D. Develop marketing materials; place print, radio and cable TV advertising in statewide and local media; and, utilize electronic Internet advertising such as e-mail postcards and Web site banners.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ACCESS/WORKFORCE DEVELOPMENT

Results/Accomplishments

A. Student Services -- toll-free phone and web access for students provided follow-up to assist with admission, enrollment, payment, and other NAU processes. Implemented on-line chat. Advisors hired to work with students at a distance. On-site assistance available at 30 offices around the state. Prospective students are called and offered assistance completing the application materials and/or put in touch with an academic advisor.

B. Technical Infrastructure -- Internet bandwidth met high-bandwidth demands of students through an increase in bandwidth from 60 MB to 90 MB. Internet 2 connectivity was maintained to support national exchange of instructional and research data. Modem pools were maintained in rura areas to better serve students. Citrix server enabled complex software to be accessed by over 3,881 students with limited computer power. Successful implementation of the all-digital ITV System, including the addition of three digital ITV classrooms at the East Maricopa, West Maricopa and Globe/Miami campuses. A fourth digital ITV classroom will be completed in Tucson during Summer 2005.

C. Faculty support -- 153 web courses developed since FY 2003 with TRIF funding. Over 300 Web courses were taught each semester during Academic Year 2004-2005 using a combination of TRIF and Distance Learning Services funding. Approximately 45% growth in Web enrollments.

D. Conducted comprehensive marketing campaign to place print, radio and cable TV advertising in statewide and local media and utilized electronic Internet advertising such as e-mail postcards and Web site banners. Multi-purpose, multi-media marketing materials were emphasized. Wide variety of materials developed and used in multiple campaigns for each program.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ACCESS/WORKFORCE DEVELOPMENT

		FY 2002	FY 2003	FY 2004	FY 2005	FY 2005	FY 2006
PERFORMANCE MEASURES/DELIVERABLES		***ACTUAL***	***ACTUAL***	***ACTUAL***	***PROJECTED***	***ACTUAL***	***REVISED***
	Leveraged Investment						
1.	Grants/Contracts Proposed		$3,951,834	$5,094,132	$250,000	$1,000	$250,000
	Technology Transfer						
2.	Courses/Modules Sold/Brokered	0	5	0	2	0	2
	Economic Development						
3.	Companies identifying NAU as reason for relocating						
	or expanding in AZ		0	0	1	0	1
	Work Force Contributions						
4.	Potential New Students Served						
	-New Teachers	250	542	807	600	679	700
	-Nurses/Health Professionals	120	266	414	300	464	350
	-Engineers with Advanced Training	20	Reported in ARU TRIF	Reported in ARU TRIF	30	Reported in ARU TRIF	ARU initiative ended - FY2005
	-Business/Non-Profit Managers	44	182	303	200	442	350
	Specific Curriculum Innovations						
5.	Degree/Certificate Programs	11	19	37	20	41	40
6.	Statewide Access (Rural and Urban)	yes	yes	yes		yes	
7.	Regional/National Global Access	yes	yes	yes		yes	
8.	New/Revised Courses	75	72	105	80	153	180
	Partnerships						
9.	Community College Partners	14	16	17	16	17	16
10.	Tri-University (ASU, NAU, U of A)	3	3	3	3	3	3
11.	K-12 Partners (schools/districts)	30	51	119	60	127	120
12.	Industry or Agency Partnerships	2	21	42	25	75	50

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NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

BIOSCIENCES/BIOTECHNOLOGY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 200,490	$ 200,490		$ 281,233
TRIF Revenue	768,000	844,490	806,400	806,400
Total Revenue	$ 968,490	$ 1,044,980	$ 806,400	$ 1,087,633
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 301,957	$ 570,586	$ 93,000	$ 815,724
ERE	85,085	125,796	18,000	174,021
All Other Operating	581,448	67,366	695,400	97,888
TOTAL OPERATING BUDGET	$ 968,490	$ 763,748	$ 806,400	$ 1,087,633
CAPITAL BUDGET				
Building Renovation	$ -	$ -	$ -	$ -
Debt Service	-	-	-	-
COP's Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	$ -	$ -	$ -	$ -
EXPENDITURES GRAND TOTAL	$ 968,490	$ 763,748	$ 806,400	$ 1,087,633

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

INITIATIVE OVERVIEW

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

1. Enhance the reputation of Flagstaff and Arizona as a center of quality bioscience/biochemistry research
2. Secure additional resources. largely in the form of federal grants, to speed up the processes of basic and applied research related to biotechnology
3. Stimulate technology transfer to better position Arizona in the fields of bioscience and biotechnology
4. Expand and enrich the Arizona workforce trained in state-of-the-art aspects of biotechnolog

NORTHERN ARIZONA UNIVERSITY

FY 2005 ACTUAL/FY 2006 BUDGET

BIOSCIENCES/BIOTECHNOLOGY

FY 2005 GOALS/OBJECTIVES

1. Identify new projects for major focus in the TRIF budget years 5 and 6
2. Focus efforts on obtaining new grant funds, primarily from the federal government using TRIF funds for leverage
3. Establish additional external collaborations with individuals and groups from industry and other academic institutions
4. Continue our nascent efforts with regard to obtaining patents for the new discoveries that have been supported, in part, by TRIF funds
5. Provide technical training and education to undergraduate and graduate students through advanced-content classes and individual research experiences
6. Expand the "mini-grant" program that provides support up to $25,000 to investigators exploring initiatives that might possibly expand into major Bio-Tech Projects FY 2005 GOALS/OBJECTIVES

	PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 ACTUAL*	*FY 2003 ACTUAL*	*FY 2004 ACTUAL*	*FY 2005 PROJECTED*	*FY 2005 ACTUAL*	*FY 2006 REVISED*
1.	**Leveraged Investment**						
	Increased External Funding	$1,400,000	$6,286,000	$5,550,000	$3,000,000	$1,339,900	$1,500,000
2.	**Technology Transfer**					$11,600,000 pend	
3.	Patents Applied For	1	2	2	1	1	1
4.	Products Generated/Disclosed		5	discussions	1	2	1
5.	Business Expansions	0			1	2	1
6.	Industry Partnerships	0	2	2	2	2	3
7.	Tech Transfer: startup companies created	0	2	1	0	0	0
.8	Presentations at professional meetings			55		24	
	Publications in refereed journals			59		3, 8 in prep or sub	
.9	**Economic Development**						
	Incubation/Formation of Biotech Concerns in Flagstaff/Northern Arizona				1	2	1
10.	**Work Force Contributions**						
11.	Graduate/postdoc students in pipeline	60	62	60	65	25	70
12.	Undergraduate students with research experience	80	79	43	65	53	110
13.	Undergrad students in specialized bio-tech courses			133		58, 12 grad	
	M.S./PhD/Post-Doc Graduate Increases	11	12	5	3	8	5
14.	**Specific Collaborations**						
	New Research Collaborations	6	29	3	1	17	2

FY 2005 RESULTS AND ACCOMPLISHMENTS

Leveraged Investments:
There was a general decrease in the NEW leveraged funding compared to previous years, in part because those researchers who had received large amounts of funding for the initial three years were not included in this report. There was still a large amount of new funding received, more than 1.5 times that which was taken in through TRIF funding. Based on previous success rates, the $11.6M pending should yield more than $4M in funding, which will exceed the projected amount. All but three of the projects funded through this year's proposals submitted proposals for external funding at least partially as a result of having TRIF funds available.

Technology Transfer:
Five patents from previous years are in place, one new patent has been filed this year, and two product disclosures have been filed. Two business expansions have also been started. While no companies have been created, several of the researchers have begun discussions to accomplish this goal. There were 24 presentations at professional meetings this year, which should lead to further publications, grant activity, and new products and processes as further research is continued on these projects.

Work Force Contributions
We now offer specialized training in molecular techniques, immunology, instrumentation, biochemistry and medical microbiology. 58 undergraduate students received training in FY05. This is fewer than the previous year because one of the classes is offered every second year. Students not only learn how to carry out these activities, but more importantly, they also learn the theory behind the use of these various apparatus and procedures. When combined with research training in the laboratory, this number increases to over 100 undergraduate students receiving training in research techniques. We currently have 5 new post-doctoral fellows in place and over 50 undergraduates working in the labs on TRIF-funded research projects.

Specific Collaborations
One of the most exciting collaborations is a new initiative, called SABRE (Strategic Alliance for Bioscience Research and Education). SABRE has brought together faculty and researchers from disciplines such as Biology, Electrical Engineering, Chemistry, Physics and Astronomy, and Health Professions with representatives from the Northern Arizona Technology and Business Incubator and the Greater Flagstaff Economic Council to take advantage of trends toward convergence among disciplines in the life sciences, chemistry, environmental science, physics and engineering. SABRE has been approved by the Arizona Board of Regents and has led a NAU presence at the Arizona Bio Expo. In addition to this on-campus collaboration effort, a great number of off-campus collaborations have been established. These include collaborations with researchers in both academics and business throughout Arizona and the United States, as well as international collaborations.

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NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET

E-LEARNING

	FY 2005 REV BUDGET	FY 2005 ACTUAL	FY 2006 ORIG BUDGET	FY 2006 REV BUDGET
REVENUE				
Carry Forward	$ 658,826	$ 658,826	$ -	$ 1,210,110
TRIF Revenue	2,160,000	2,375,127	2,268,000	2,268,000
Total Revenue	$ 2,818,826	$ 3,033,953	$ 2,268,000	$ 3,478,110
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 2,003,866	$ 1,184,635	$ 1,632,000	$ 2,260,771
ERE	471,700	340,964	383,000	660,841
All Other Operating	343,260	298,244	253,000	556,498
TOTAL OPERATING BUDGET	$ 2,818,826	$ 1,823,843	$ 2,268,000	$ 3,478,110
CAPITAL BUDGET				
Building Renovation	-	-	-	-
Debt Service	-	-	-	-
COP's Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	$ -	$ -	$ -	$ -
EXPENDITURES GRAND TOTAL	$ 2,818,826	$ 1,823,843	$ 2,268,000	$ 3,478,110

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

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 for Higher Education. A request to change the name of the Center to "The Center for E-Learning" is being submitted to ABOR at the August board meeting. 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.

FY 2005 GOALS/OBJECTIVES

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.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET

E-LEARNING

	PERFORMANCE MEASURES/DELIVERABLES	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 PROJECTED	FY 2005 ACTUAL	FY 2006 REVISED
	Workforce Contributions						
1.	Number of new Web courses developed and offered	125	101 new courses, 140 new sections offered	121	90	141	80
			9476 enrollments, in 408 sections	22 in Winter '04			
2	Number of new IT-enhanced courses developed		32	42	50	53	60
3.	Increase in enrollments of distance students in Web courses		1,703	(136)	500	980	500
4.	Increase in residential undergraduate enrollments		663	793	750	1,268	750
5.	Increase in student academic success in Web courses.		DFW dropped from 17.7% to 16.8%, a 5% improvement.	DFW dropped to 9.0%	5%	DFW dropped from 17.7% in FY02 to 15.2% in FY05, an aggregate	5%
6.	Total number of faculty participating in Web development	150	117	155	120	126	120
			82 on web courses 35 on web enhanced				
7.	Number of NAU students taking Web courses		12,180	10,133	11,000	12,381	12,000
8.	Number of graduates with technical literacy skills *(to be assessed directly)*	1500	889	1,633	2,000	1,919	2,300
9.	Percentage of students satisfied with Web learning opportunities		84%, an improvement from 75% last year.	89.2%	90%	87%	90%
	(senior survey data)		89%, an improvement from 88% last year.				
10.	Number of new certificates in advanced technology for students	2	1		1	0	1
	Leveraged Investment						
11.	Grants and donations for research in best-practices	$50,000	$0	$0	$50,000	$0	$50,000
	Specific Collaborations						
12.	Number of private sector partnerships		0		1	2	1

FY 2005 RESULTS AND ACCOMPLISHMENTS

Leveraged Investment:

The first annual E-Learning Institute was held in May 2005. Four days of intensive seminars and workshops with tracks in Pedagogies and Strategies, Assessment, Emerging Technologies, and Tools & Technologies. Two keynote addresses were given, opening by Dr. Steve Ehrmann, TLT Group, and the closing talk by Dr. Phil Long from MIT. There were 151 attendees primarily from NAU. Next year we expect an expanded agenda and to encourage more attendance from around the state.

Technology Transfer:

Shared Curriculum Development - the goals of these projects are to engage teams of faculty with shared curricular development goals to enhance student success in large enrollment courses.

ENV 101Lab – Diana Elder
Introductory environmental science field work using tablet PCs with Geographic Information System (GIS) software and onboard Global Positioning System (GPS). To increase student engagement and field based understanding of data collection and basic research in environmental science. Students will map ecosystem features and relate observation to database information in a geospatial environment.

CHM 130, 151, 235, 238
Improving student success and retention in introductory chemistry. Synchronous communication and conferencing tools will be used for capturing and providing on-demand access for initial access and review.

GIS in the undergraduate geology curriculum – Paul Umhoefer
GIS with onboard GPS in the undergraduate class and field work.

DH 208, 235, 354, 369, 416 – Aamodt, Dray & Moore
Dental Hygiene Electronic Problem Based Learning – A multicontextual approach.

MAT 119, 125 – Nandor Sieben
Online homework to increase success in entry level mathematics courses.

CHM 151Lab, 152Lab
Retooling general chemistry labs using automated feedback homework system.

CIS 360, 370, 310, 410
Network Information Security principles across the Computer Information Systems program.

Physics & Astronomy Introductory courses
Classroom Response Systems (CRS) in large enrollment intro science courses.

PSY 101 – Laurie Dickson.
Building Student Engagement through Web-based Interaction in Psy101.
Hybrid Course Development - these projects were begun in FY04 and most were completed in FY05

SOC 101 – James S. Reed
In Introduction to Sociology, students consider environmental issues in relation to social behavior. This project involves development, delivery and assessment of a web-enhanced introductory course designed for large sections of almost 100 students. In addition to attending two class meetings per week, students are expected to complete activities, quizzes and reports that are delivered electronically. Two sessions are being taught Fall Semester, 2004 with a total enrollment of 179 students.

ANT 310, 311, 312 – Andrea A. Hunter and Walter Vannette
These courses are designed to prepare NAU student for international cultural immersion. The three interpedently linked courses include two web-enhanced courses that students take before and after studying abroad, and one web-based course that student take while in the host country. These courses will help students prepare for studying abroad, absorbing and internalizing their international cross cultural experience, and applying what they learned while abroad.

ACC 256 – T.S. Amer
The Principles of Accounting hybrid course includes three inter-related components: on-line interactive multimedia lectures, WebCT quiz and grade book tools, and WebCT Assignment Drop Box. Students can view lectures at their own pace and keep track of their grades from quizzes and other assignments. The course will provide flexibility and help manage enrollment. Course is scheduled to be offered during Spring Semester, 2005.

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Human and Cultural Relations in Criminal Justice, a junior level writing requirement, is being redesigned into a hybrid course with 50% of the course offered online and the other 50% delivered face to face. The project includes use of interactive group exercises, essays, and exams that are delivered online. Hybridization would allow for more students to enroll in the course and for faculty to share curriculum and activities across all sections.

NORTHERN ARIZONA UNIVERSITY

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FY 2005 ACTUAL/FY 2006 BUDGET

E-LEARNING

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CHM 151L – Jim Maxka
A hybrid model of the introductory chemistry lab has been developed to show innovative ways of teaching and performing assessment. Project goals are to increase student learning, minimize drop rate, and provide new methods for analyzing the effectiveness of our laboratory assignments. The online course would save student time, TA time, use of chemicals, and generation of waste. Lab videos, reports, post-lab follow up questions, and grades are available to students online.
Completed the projects for design of exemplary practices in assessment of student learning in degree programs that rely heavily on electronic instructional technologies. These include electronic portfolios in elementary education, assessing foundation courses in the Master of Science in Management, comparing outcomes in hybrid and traditional courses in Introduction to Advertising, comparing outcomes in online and traditional courses in Business and Professional Speaking courses, and building assessment reliability across eight programs in The School of Communications that use hybrid and online courses.

Faculty Fellows Research Program. Four fellows worked with the E-Learning staff in directed research projects in the areas of technology for communication, verbal and written, Mathematics Education Practices on the web and Nursing
Education Problems on the web. The fellows were: Randi Reppen (English), Jeff Shamata-Hovermill (Math), Laura Humphrey (Communication), Sally Dosier (Nursing).

Starting Fall 2004 all IITV courses used WebCT and web resources for document delivery and further enhancements such as discussions and online gradebook.

Work Force Contributions:
Significant and above projected contributions to the workforce were achieved in FY 05. The number of new web courses developed and offered, number of new IT enhanced courses, number of faculty participating in web development, and the number of NAU students taking web classes exceeded expectations. Increases in enrollment for distance students and residential undergraduate students were also achieved in FY 05. Finally, improvements in student academic success were obtained as evidenced by a 16% improvement in the DFW rate for web courses.

Specific Collaborations:
NAU is a member (since Jan. 2003) of the Better Teaching through Assessment (BeTA) Project, a FIPSE funded open source development project managed by the Teaching Learning & Technology Group. The BeTA projects support the development of better assessment strategies for gathering student feedback about courses and faculty. NAU is participating with eleven other universities and colleges to develop a multi-tiered online course evaluation tool. The first release of the software is scheduled for Q3 of 2005. NAU is hosting the annual meeting for this project in May 2005.

BeTA members: Johnson C. Smith University, Mount Royal College, Ohio University, St. Edward's University, Santa Ana College, Valencia Community College, University of Hong Kong, Northern Arizona University, University of Southern Indiana, Kent State University, Embry-Riddle Aeronautical University and Washington State University.

TLT Group, see http://www.tltgroup.org/default.htm
BeTA, see http://www.tltgroup.org/Beta/betahome.htm

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NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ERDENE

	FY 2005 REV BUDGET	FY 2005 ACTUAL	FY 2006 ORIG BUDGET	FY 2006 REV BUDGET
REVENUE				
Carry Forward	$ 296,812	$ 296,812	$ -	$ 530,649
TRIF Revenue	1,977,600	2,174,561	2,076,480	2,076,480
Total Revenue	$ 2,274,412	$ 2,471,373	$ 2,076,480	$ 2,607,129
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 1,576,560	$ 1,297,726	$ 1,644,866	$ 1,772,848
ERE	307,808	341,622	320,749	469,283
All Other Operating	390,044	301,376	110,865	364,998
TOTAL OPERATING BUDGET	$ 2,274,412	$ 1,940,724	$ 2,076,480	$ 2,607,129
CAPITAL BUDGET				
Building Renovation	-	-	-	-
Debt Service	-	-	-	-
COP's Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	$ -	$ -	$ -	$ -
EXPENDITURES GRAND TOTAL	$ 2,274,412	$ 1,940,724	$ 2,076,480	$ 2,607,129

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

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 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.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
ERDENE

INITIATIVE OVERVIEW (continuted)

Some anticipated 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
- Assisting existing business and local government through workforce training and development in environmental themes and skills
- An environmental research and development facility
- Development of new courses and certificates in ecological restoration and environmental engineering
- Preparation of baccalaureate, master, and doctoral students in environmental science and engineering

FY 2005 GOALS/OBJECTIVES

Continue success of program and achieve stated performance outcomes.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ERDENE

	PERFORMANCE MEASURES/DELIVERABLES	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 Projected	FY 2005 Actual	FY 2006 REVISED
	Leveraged Investment						
1.	Leveraged Federal and State Funds	$5,525,000	$4,338,056	$4,369,274	$7,986,000	$12,938,699	$6,308,000
2.	Leveraged Industrial $$	$366,000	$413,000	$53,950	$170,000	$508,449	$152,000
3.	Leveraged other $$ (Private, etc.)	$642,000	$300,873	$529,749	$155,000	$493,628	$304,000
4.	Other Returns (presentations and publications)	121	180	138	139	305	27
5.	Arizona Economic Losses Avoided			incalculable			
	Technology Transfer						
6.	Products Generated and in the Marketplace			49	10	6	2
7.	Business Spin-offs	1		1	0	1	2
8.	Patent Applications Generated	1		0	0	0	2
9.	Conferences Sponsored	14	19	21	20	28	8
10.	Business Expansions	2	1	5	4	16	8
	Work Force Contributions						
11.	Graduate students in pipeline or graduated	56	87	102	32	35	61
12.	High-end Baccalaureates in Specific Disciplines	38	27	47	5	23	84
13.	Certificates Granted	0		3	43	73	8
14.	Post-Doc students in pipeline or graduated	26	7	8	4	6.5	5
15.	Cont Ed Prof/Sponsored event attendees	85	312	2000	83	142	46
	Specific Curriculum Innovations						
16.	New Programs -- full-time students	3	1	1	0	0	9
17.	Revised Courses and programs	10	14	16	6	22	9
18.	New Courses -- full-time students	2	9	29	1	31	15
	Partnerships (Specific Collaborations)						
19.	Community College 2+2 Programs	2	9	7	2	8	5
20.	Tri-University (ASU, NAU, UofA)	4	6	7	3	10	5
21.	Industry/Private Sector Collaborations	17	73	58	26	79	27
22.	Community-based (including tribes)	34	58	51	23	60	46
23.	Regional, Nat'l, Internat'l Research and Linkages	20	41	54	37	72	15

ERDENE Initiative

Environmental Research, Development and Education for the New Economy (ERDENE) focuses on environmental programs and projects that benefit the Arizona economy and communities. In 2005, the ERDENE initiative included six core programs in their fifth year of operation and ten projects recently funded and in their first year of operation. Together these ERDENE sponsored programs and projects represent a wide variety of research, education and outreach aimed at benefiting the environment and economies of local communities.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET

ERDENE

Leveraged Investment

Phenomenally, ERDENE programs raised more than $12 million dollars in outside funds during FY2005. Forty-nine awards totaling more than $10 million were received by faculty participating in the Merriam-Powell Research Center alone.

Federal support for the Ecological Restoration Institute at NAU was designated by Congress and the President in September 2004 through passage of federal legislation that authorizes ERI/NAU to be a restoration institute in Arizona with a designated federal budget line for the purpose of providing the research, information synthesis and transfer required to solve the wildfire crisis. Faculty and staff involved in ERDENE supported programs produced a combined total of 313 publications and professional presentations in FY2005. Conferences organized and sponsored by these programs totaled 28.

Technology Transfer

Prof. Paul Flikkema is preparing the second generation of WIZARD sensors for field testing. The products will be patentable and the testing in diverse applications will insure that their capabilities are well known. This high profile work in sensing of environmental change is also helping NAU faculty make important national connections.

Prof. Timothy Vail is developing tools to rapidly and cheaply monitor endocrine disrupting compounds in the environment. Endocrine disruptors in the environment are a rapidly emerging area of environmental and health concern.

Work Force Contributions

A total of 143 graduate students and 551 undergraduates have been involved in ERDENE supported programs in FY2005. Sixteen students involved in research and training at the Ecological Restoration Institute transitioned to professional positions related directly to forest ecology and forest management. Forty-five undergraduates and 49 graduate students are currently involved in ERDENE supported research through the Merriam-Powell Center.

Curriculum Development

Some of the many exciting curricular programs under development by the Merriam Powell Center include a Virtual Environmental Learning Space, Undergraduate Mentoring in Environmental Biology, and Research Experiences in Environmental Science for Undergraduates and for K-12 Teachers.

Collaborations

Each of the core ERDENE programs have developed dozens of significant collaborations in the past five years. In particular, several of the programs have played significant roles in developing networks of researchers and organizations dedicated to environmentally-related monitoring o enhancement. Noteworthy in this regard is the national network spearheaded by the Center for Sustainable Environments for Rescuing America's Endangered Food Traditions (RAFT) and several networks advanced by the Merriam-Powell Center including the Drought Impact on Regional Ecosystems Network, the Arizona Field Station Network, and the Inter-Mountain Regional Observatory Network.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

CAPITAL

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 1,439,035	$ 1,439,035	$ 1,349,282	$ 2,466,446
TRIF Revenue	960,000	1,055,612	1,008,000	1,008,000
Total Revenue	$ 2,399,035	$ 2,494,647	$ 2,357,282	$ 3,474,446
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 60,000	$ 22,385	$ 60,000	$ 60,000
ERE	16,800	5,516	16,800	16,800
All Other Operating	50,000	300	280,482	280,480
TOTAL OPERATING BUDGET	$ 126,800	$ 28,201	$ 357,282	$ 357,280
CAPITAL BUDGET				
Building Renovation	$ 1,000,000	$ -	$ 2,000,000	$ 3,117,165
Debt Service	920,000	-	-	-
COP's Lease Purchase Payment	-	-	-	
TOTAL CAPITAL BUDGET	$ 1,920,000	$ -	$ 2,000,000	$ 3,117,165
EXPENDITURES GRAND TOTAL	$ 2,046,800	$ 28,201	$ 2,357,282	$ 3,474,445

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
CAPITAL

INITIATIVE OVERVIEW

The major focus of this initiative is planning for capital projects to be constructed or enhanced using TRIF fund resources. The two major projects originally planned were an Applied Research Building, which would bring together researchers from a variety of sectors in a facility designed to maximize use of environmentally-sensitive materials through building techniques and site location, and a major renovation of the 30+ year-old Biology and Chemistry labs and classrooms. Further analysis of the Biology and Chemistry buildings as part of ABOR's "deferred maintenance" study showed that it would be impractical to renovate the labs. Thus, a decision was made to construct a new lab building.

The passage of the research bill gives NAU an alternate source for dollars for these projects. However, the pressures to expand the nursing program and equip the ARD and lab buildings makes continuation of this initiative imperative, albeit on a reduced scale. Thus, instead of setting aside enough funds to pay debt service on $28 million, we are reserving a smaller amount -- $960,000 for FY05 and $1,008,000 for FY06.

We plan to use a significant amount of the carry-forward money for a "one-time" purchase for the ARD building, such as a "Living Machine" that will allow us to us to demonstrate a complete "waster-water" cycle -- from "black water" to reclaimed water. This would not only increase the sustainability of the building, but would also increase the teaching/pedagogical aspects of it since the ARD building will not be completed until FY07. Since we have no other source of funds, being allowed to keep these roll-forward funds would be extremely helpful.

Additionally, some carryforward funds have been identified as a possible source for a recent request to ABOR for the development of a new Conference Center in Flagstaff. This request has not yet been approved therefore, more specific information will be provided in the mid-year report if approval is granted.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

UNIVERSITY INITIATIVES

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 108,920	$ 108,920	$ -	$ 522,416
TRIF Revenue	717,127	788,549	752,983	752,983
Total Revenue	$ 826,047	$ 897,469	$ 752,983	$ 1,275,399
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 403,370	$ 259,371	$ 350,000	$ 867,302
ERE	85,893	97,883	75,000	318,816
All Other Operating	336,784	17,800	327,983	89,281
TOTAL OPERATING BUDGET	$ 826,047	$ 375,054	$ 752,983	$ 1,275,399
CAPITAL BUDGET				
Building Renovation	-	-	-	-
Debt Service	-	-	-	-
COP's Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	$ -	$ -	$ -	$ -
EXPENDITURES GRAND TOTAL	$ 826,047	$ 375,054	$ 752,983	$ 1,275,399

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

INITIATIVE OVERVIEW

As the needs of the state economy change, opportunities often arise for NAU to participate in projects (often Tri-University projects) that arise relatively suddenly. In the past, NAU has been unable to react quickly to identify funds to put toward these initiatives. Due to the dynamic nature of this Initiative, projecting future outcomes is difficult since we will be responding to opportunities not yet known. In addition, it has become obvious through the Auditor General's 301 Audit that a centralized expenditure of administrative funds to provide oversight to the entire project would be beneficial. Therefore, NAU has established a new TRIF project, "University Initiatives" which we will use for both administrative costs and for investment in relevant research initiatives as they arise.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
UNIVERSITY INITIATIVES

FY 2005 GOALS/OBJECTIVES

FY05 was the first year for this project. The goals of this initiative are to provide a flexible structure that allows NAU to respond to changing needs and opportunities.

This Initiative has helped to support projects in Biological research and the Center for Sustainable Environments. These funds have provided additional resources for projects under ERDENE for Dr. Gary Deason and Bioscience/Biotechnology for Dr. Paul Keim and Dr. Paul Torrence.

	PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 ACTUAL*	*FY 2003 ACTUAL*	*FY 2004 ACTUAL*	*FY 2005 Projected*	*FY 2005 ACTUAL*	*FY 2006 REVISED*
	Leveraged Investment						
1.	Leveraged Federal and State Funds				$500,000	$581,812	$600,000
2.	Leveraged Industrial $$						$75,000
3.	Leveraged other $$ (Private, etc.)				$100,000	$10,000	$120,000
4.	Other Returns (presentations and publications)				10	2	15
5.	Arizona Economic Losses Avoided						
	Technology Transfer						
6.	Products Generated and in the Marketplace						
7.	Business Spin-offs						
8.	Patent Applications Generated				1	1	0
9.	Conferences Sponsored				2		3
10.	Business Expansions				1		1
	Work Force Contributions						
11.	Graduate students in pipeline or graduated					4	
12.	High-end Baccalaureates in Specific Disciplines					10	
13.	Certificates Granted						
14.	Post-Doc students in pipeline or graduated						
15.	Continuing Education Professionals						
	Specific Curriculum Innovations						
16.	New Programs -- full-time students						
17.	Revised Courses and programs						
18.	New Courses -- full-time students					1	
	Partnerships (Specific Collaborations)						
19.	Community College 2+2 Programs						
20.	Tri-University (ASU, NAU, UofA)					2	2
21.	Industry/Private Sector Collaborations				2	1	2
22.	Community-based (including tribes)				3	1	4
23.	Regional, Nat'l, Internat'l Research and Linkages						3

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
UNIVERSITY INITIATIVES

FY 2005 GOALS/OBJECTIVES

FY05 was the first year for this project. The goals of this initiative are to provide a flexible structure that allows NAU to respond to changing needs and opportunities.

This Initiative has helped to support projects in Biological research and the Center for Sustainable Environments. These funds have provided additional resources for projects under ERDENE for Dr. Gary Deason and Bioscience/Biotechnology for Dr. Paul Keim and Dr. Paul Torrence.

	PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 ACTUAL*	*FY 2003 ACTUAL*	*FY 2004 ACTUAL*	*FY 2005 Projected*	*FY 2005 ACTUAL*	*FY 2006 REVISED*
	Leveraged Investment						
1.	Leveraged Federal and State Funds				$500,000	$581,812	$600,000
2.	Leveraged Industrial $$						$75,000
3.	Leveraged other $$ (Private, etc.)				$100,000	$10,000	$120,000
4.	Other Returns (presentations and publications)				10	2	15
5.	Arizona Economic Losses Avoided						
	Technology Transfer						
6.	Products Generated and in the Marketplace						
7.	Business Spin-offs						
8.	Patent Applications Generated				1	1	0
9.	Conferences Sponsored				2		3
10.	Business Expansions				1		1
	Work Force Contributions						
11.	Graduate students in pipeline or graduated					4	
12.	High-end Baccalaureates in Specific Disciplines					10	
13.	Certificates Granted						
14.	Post-Doc students in pipeline or graduated						
15.	Continuing Education Professionals						
	Specific Curriculum Innovations						
16.	New Programs -- full-time students						
17.	Revised Courses and programs						
18.	New Courses -- full-time students					1	
	Partnerships (Specific Collaborations)						
19.	Community College 2+2 Programs						
20.	Tri-University (ASU, NAU, UofA)					2	2
21.	Industry/Private Sector Collaborations				2	1	2
22.	Community-based (including tribes)				3	1	4
23.	Regional, Nat'l, Internat'l Research and Linkages						3

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA UNIVERSITIES NETWORK (AZUN)

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 1,615,559	$ 1,615,559	$ 1,028,979	$ 2,531,942
TRIF Revenue	1,228,962	1,228,962	2,031,000	2,031,000
Total Revenue	$ 2,844,521	$ 2,844,521	$ 3,059,979	$ 4,562,942
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 798,925	$ 2,232	$ 992,212	$ 1,460,141
ERE	208,958	751	322,649	501,924
All Other Operating	807,659	309,596	1,745,118	2,600,877
TOTAL OPERATING BUDGET	$ 1,815,542	$ 312,579	$ 3,059,979	$ 4,562,942
CAPITAL BUDGET				
Building Renovation	-	-	-	-
Debt Service	-	-	-	-
COP's Lease Purchase Payment	-	-	-	-
TOTAL CAPITAL BUDGET	$ -	$ -	$ -	$ -
EXPENDITURES GRAND TOTAL	$ 1,815,542	$ 312,579	$ 3,059,979	$ 4,562,942

*Note: FY 2005 revenue/expense reported prior to official fiscal year close

INITIATIVE OVERVIEW

Arizona Universities Network, 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;
• Provide new students access to distance-delivered degrees and certificates through the public higher education system now and to meet increased demand in the future.
• 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;
• Provide a high level of innovative student services that enable distance learning students to be successful in completing their chosen degree programs.
• Emphasize areas of study that support lifelong career advancement.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA UNIVERSITIES NETWORK (AZUN)

FY 2005 GOALS/OBJECTIVES AND RESULTS/ACCOMPLISHMENTS

GOALS AND 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.

3. To implement two consultant studies to provide guidance in the development of online student services and identifying the path for the long-term growth and structure of Arizona Universities Network.

RESULTS AND ACCOMPLISHMENTS

In early 2004 the Board requested that external consultants be hired to report on the extent to which the three universities were providing students at a distance access to student services, and to evaluate the past performance and provide a "roadmap" for future activities for ARU. Through a competitive bid process WCET (an organization within WICHE) was chosen to analyze the universities' student services and Hezel and Associates was chosen to evaluate and provide a "roadmap" for the future of ARU. The reports from the two groups were the basis for the November 2004 decision to transfer leadership of ARU to Northern Arizona University. Northern Arizona University has made progress in many areas to serve the needs of the universities and citizens of Arizona.

Program Development
Capacity has been increased to meet anticipated needs in programs initially identified by the community colleges as high need areas. Activities that support program development logistically include recruiting a project manager to support Web course development and modifying the PeopleSoft system to provide reporting of ARU students and program growth

Nursing -- Increased capacity in Web delivered RN-BSN and MSN programs to serve the anticipated additional students. Commitment to increase capacity as needed for the future. Partnership created with Tucson Medical Center to start a nursing student cohort in Fall 05.

Teacher Education -- Increased capacity in teacher education programs to serve the anticipated additional students. Commitment to increase capacity as needed for the future. Two courses, ECI 309 and ETC 447, have been migrated to the web for the Bachelor's completion in Teacher's Education, and a third course, ECI 307, is planned to be migrated to the web.

Program Development (continued)

Fire Science and Law Enforcement -- Capacity in the Northern Arizona University Bachelor of Applied Science and Bachelor of Arts in Liberal Studies Public Agency Service degree completion programs increased to meet need. Commitment to increase capacity as needed for the future. Meetings were held with representatives of Phoenix/Maricopa County corrections, police, fire and attorney's offices, and with Mesa and Scottsdale Community Colleges to determine course content for Bachelor of Applied Science degree specializations in Law Enforcement Administration and Fire Science Administration. Degree completion students may be admitted to the Bachelor of Applied Science and Bachelor of Arts in Liberal Studies Public Agency Service programs now. They may complete that program with a concentration in law enforcement or fire science, or they may transfer to the Bachelor of Applied Science degree specializations in Law Enforcement Administration and Fire Science Administration when approved.

Quantitative Math Course Development -- In the original business plan it was anticipated that a pilot program teaching College Algebra using a new pre-produced commercially available course template would be initiated. College Algebra is no longer required for any degree programs at Northern Arizona University, ASU has also eliminated College Algebra as a requirement, and the national trend is to move from requiring College Algebra to requiring Quantitative Reasoning as a better fit with curriculum needs. Quantitative Reasoning is the new required course which provides students with a practical understanding of how math is used in business, the humanities and social sciences, and other programs. Northern Arizona University is developing a Web-based Quantitative Reasoning course for first delivery in the fall.

Development and Delivery of Shortened-Format Web Courses -- A substantial list of Web courses have been taught successfully in shortened-formats in Summer and Winter Sessions at NAU. These courses, from a variety of academic disciplines and professional programs, form the foundation of the array of courses that will be considered by faculty and academic administrators for delivery in shortened format. Policy and procedures changes are proposed to support this initiative.

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

Continue the Development of Competency-Based and Experiential Learning -- A subgroup of the committee appointed to examine the potential for the awarding of academic credit for prior learning has developed the outline of a process and document to inform academic departments of a variety of fundamental issues related to the implementation options for awarding of credit based on prior learning. The document addresses issues of administrative infrastructure, academic standards, and financial considerations.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA UNIVERSITIES NETWORK (AZUN)

AZUN Grants:
NAU/ASU RN to BSN program and UA Nursing PhD Program -- A collaborative plan to positively influence the state's critical shortage of nurses includes an expanded RN to BSN program and a nursing PhD program to increase the number of qualified university nursing faculty. Eleven PhD courses were converted to an on-line delivery for a total of 28 online courses in the program. A second cohort of 20 online PhD students was admitted. Four faculty development opportunities were presented to assist faculty to improve their online teaching skills. The Online PhD Program will be receiving a 2005 WCET Outstanding Work (WOW) Award at the WCET Annual Conference in November. The ASU and NAU RN/BSN programs continued development of on-line courses and program expansion. NAU added 24 new students for a total of 136 students enrolled in the program. A total of eight courses are provided with several faculty offering the distance learning courses. At ASU six courses have been redeveloped for on-line delivery with two additional clinical courses to be converted to an online management format. Discussions with several hospital systems have occurred in which the online program has been approached. Negotiations are ongoing and promising.

Nurse EDucator Program (NED) -- Progress to date includes project staff being hired and the advisory committee convening four times. All courses have been actively reviewed and revised. The program has been approved by ASU as a graduate certificate program. Recruiting and marketing strategies and materials are in progress. Strategies for orienting student services and graduate program staff to the program are in process. Preliminary information, flyers, announcements, and e-mail notifications have yielded about 20 inquiries and a list of over 120 students who have taken one or more of the courses has been generated. Focus groups with minority nursing groups are ongoing and data are being used to address cultural responsiveness in the program. Students were introduced to use of PDAs for education in the two courses that were offered in SS 2005. The instruction design team is working in collaboration with HRSA grant faculty to develop a patient tracking mechanism which can be used with the PDAs in clinical settings.

Secondary Math & Science Teacher Certification Program -- Teacher education has also been identified as a critical workforce development area. The online secondary math & science teacher certification program is designed to be a high-quality, effective preparation program that provides relevant professional learning experiences. The Program consists of 30 credit hours and includes a supervised student teaching experience. The first student cohort has been implemented with 11 students initially enrolling. Four students completed the program in FY 2005 and successfully received teacher certification. An electronic portfolio system was piloted by first year cohort members (science students) which will be included as a component in the FY 2006 program.

Student Services

AZUN Website: Significant progress has been made toward meeting the WCET standards in this first phase of the website upgrade.
-- The new website went online in mid-July 2005. It incorporates the new branding advanced through the Lipman Hearne process. This includes the new name—The Arizona Universities Network—and the new logo. Several new domain names were purchased and programmed to roll up to a new URL: www.azun.net. New software licensing and security certificates have been purchased and installed.
-- The page content has been completely rewritten to explain the benefits of AZUN and help students make informed choices. The website navigation redesign coincides with the new text content, provides easy access to AZUN benefits, and complies with industry standards by offering both global and customized audience paths. The class search is now directly integrated with CAS (Course Applicability System), making it easier for students to determine the transferability of their class choices. Program offerings are searchable and new functionality allows prospective students to request program information.
-- The new administrative interface guarantees regular prospect follow-up communication. Current students can now apply and enroll in one simple online form. The form does not link to the SIS backend but is seamless to the student and streamlines the work done by the AZUN coordinators. These combined upgrades provide a higher level of service to current and future students.
-- Work has already begun on the next phase of website improvements, which will include new layout and graphics prescribed by the AZUN marketing group. A web programmer has been hired to coordinate the updates. Upgrade of computer infrastructure to ensure capacity and redundancy underway

AZTutor -- Provided student access to an online tutoring support center. Offerings were expanded to include tutoring in eight additional subjects. Promotion continued to students, instructors, and staff through use of existing university mediums such as newsletters, websites, class presentations, and faculty meetings. Purchase of I-linc software improved operating platform capabilities. Seamless integration of the online program into existing tutoring programs has not been accomplished but discussions are ongoing. A commitment of FY06 support has been received from IT student fee funding and NAU Information Technology Services to fund 25 hours/week of tutoring to include Math, Physics, Chemistry and Biology as well as payment of the annual I-linc tutoring software maintenance fee.

Scholars Portal -- For FY 2005 UA reported approximately 30 subject-related search profiles and approximately 100 information resources currently integrated and available. Systems are integrated with local authentication providing a foundation for inter-campus access. Result sets can be sorted based on date and the availability of full-text and are de-duplicated for easier browsing. Result sets have been integrated with OpenURL resolver (direct linking), the catalog and ILL. ASU has licensed and is implementing an open linking solution based upon industry standards to address the issue of declines in system performance when more than a single target database is searched. Upon implementation of its open linking solution, ASU will coordinate with Google to enable linking to much of ASU's licensed content from a single search interface--one of the Scholars Portal project's principal goals. Through monitoring and evaluation of software development and market changes, NAU learned that due to its different computing environment, a vendor-hosted option should be pursued. NAU purchased the WebFeat product for federated searching and ArticleLinker for Open URL linking. A set of 50 databases has been identified for federated searching via WebFeat. ArticleLinker will be fine-tuned for introduction to students and faculty at the start of the Fall semester.

Expansion of the Northern Arizona University Service Center to Serve AZUN Students -- An academic advisor has been hired to serve prospective students and a new student prospect conversion coordinator was recruited. Seven new Program Coordinators have been hired to expand services at campus offices: one each in East Maricopa and West Maricopa; two in Central Phoenix; and three in Tucson. These program coordinators are paid with Northern Arizona University funding, but will support AZUN students.

Articulation -- Northern Arizona University faculty and staff are working to increase program articulation through additional agreements with community college partners. A Northern Arizona University faculty member is chair of the statewide articulation group for the Bachelor of Applied Science program working to increase program specific agreements.

Infrastructure -- Ten new computer workstations have been installed to support new AZUN staff in Flagstaff. The ITV system has been expanded to new sites and computer workstations have been provided to the new urban coordinators (Northern Arizona University funding).

Marketing

Northern Arizona University contracted with the Lipman Hearne higher education marketing and communications consultants to develop a marketing plan that includes development of a positioning platform; brand name and visual identity development; strategies for higher placement on Web search engines; and an overall marketing plan through FY 2006. Activities that support marketing logistically include completion of prospect database improvements to increase functionality of the prospect communication tool. Staff hours dedicated to contacting prospects have been doubled. Half-time office specialist for marketing and full-time program coordinator have been hired.

NORTHERN ARIZONA UNIVERSITY

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA UNIVERSITIES NETWORK (AZUN)

	PERFORMANCE MEASURES/DELIVERABLES	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 PROJECTED	FY 2005 ACTUAL	FY 2006 REVISED
	Additional Work Force Contributions						
1.	Potential New Students Served						
	-Teachers				20	11	100
	-Nurses				10	73	80
	-Fire Science baccalaureate completers						50
	-Law Enforcement baccalaureate						50
	completers						
	Specific Curriculum Innovations						
2.	Degree/Certificate Programs (new)				9(4)	9(6)	9(4)
3.	Regional/National Global Access					yes	
4.	New/Revised Courses				5	28	40
	Partnerships						
5.	Community College Partners				17	17	15
6.	K-12 Partners (schools/districts)				127	127	30
7.	Out-of-State Partners				0	0	1
	Growth Indicators						
8.	Students Cross-Registering (per year)				~250	331	400
9.	Web Course Completion Rates				TBD	TBD	TBD
10.	Number of Students Enrolled System-	12353	35616	40761	42799	50313	44000
	Wide in Electronically-Delivered						
	Courses (on and off campus)						
11.	Number of System-Wide Electronically-	520	1471	1531	1715	1483	1800
	Delivered Courses (on and off						
	campus)						
12.	Number of Electronically-Delivered	23	37	43	45	49	48
	Programs System-Wide						
13.	Number of New Students System-Wide				TBD	7514	TBD
14.	Satisfaction and Quality Measures				TBD	TBD	TBD

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UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
SUMMARY

	FY 2005 REV BUDGET	FY 2005 ACTUAL		FY 2006 ORIG BUDGET	FY 2006 REV BUDGET
REVENUE					
Carry Forward	$ 4,009,727	$ 4,009,727		$ -	$ 5,913,859
TRIF Revenue	19,200,000	21,112,242	*	20,200,000	20,200,000
TOTAL REVENUE	**$ 23,209,727**	**$ 25,121,969**		**$ 20,200,000**	**$ 26,113,859**
EXPENDITURES					
OPERATING BUDGET					
Personal Services	$ 12,032,094	$ 9,110,030		$ 10,443,235	$ 13,682,614
ERE	2,757,972	2,447,855		2,277,098	3,638,205
All Other Operating	5,269,661	4,500,225		4,479,667	3,653,040
TOTAL OPERATING BUDGET	**$ 20,059,727**	**$ 16,058,110**		**$ 17,200,000**	**$ 20,973,859**
CAPITAL BUDGET					
Building Renovation	$ 150,000	$ 150,000		$ -	$ -
Debt Service	3,000,000	3,000,000		3,000,000	5,140,000
COPs Lease Purchase Payment	-	-		-	-
TOTAL CAPITAL BUDGET	**$ 3,150,000**	**$ 3,150,000**		**$ 3,000,000**	**$ 5,140,000**
EXPENDITURES GRAND TOTAL	**$ 23,209,727**	**$ 19,208,110**		**$ 20,200,000**	**$ 26,113,859**

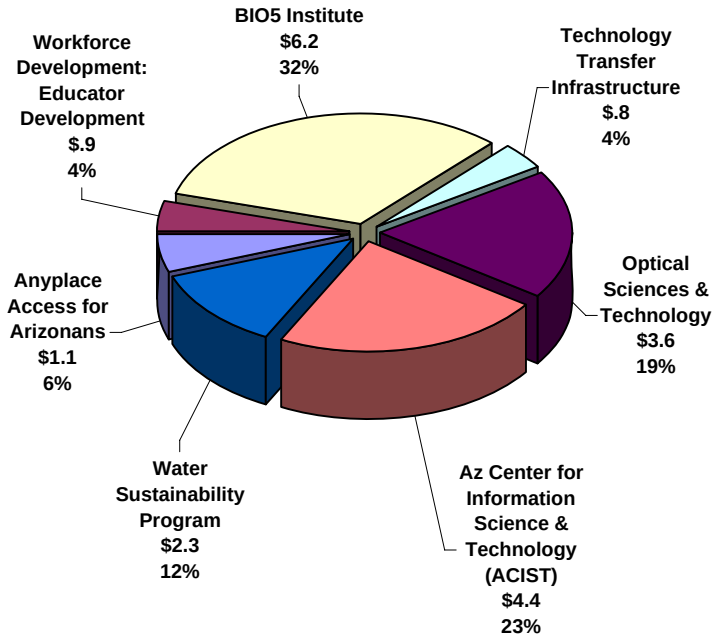
Note: FY 2005 Actual includes *projected* overrealized revenue of $1,912,242 and expenditures include encumbrances at 6/30/05.

SUMMARY BY INITIATIVE				
Anyplace Access for Arizonans	1,103,886	1,081,762	1,000,000	1,185,212
Workforce Development: Educator Development	989,172	862,376	800,000	1,089,267
BIO5 Institute	7,764,660	6,220,377	5,500,000	8,323,351
Technology Transfer Infrastructure	1,060,372	762,795	800,000	1,260,048
Optical Sciences and Technology	4,566,298	3,627,920	4,200,000	5,269,662
Arizona Center for Information Science & Technology	4,987,541	4,350,084	4,400,000	4,301,805
Water Sustainability Program	2,737,798	2,302,796	3,500,000	4,494,514
Venture Fund				190,000
EXPENDITURES GRAND TOTAL	**$ 23,209,727**	**$ 19,208,110**	**$ 20,200,000**	**$ 26,113,859**

UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 BUDGET / ACTUAL
SUMMARY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*
REVENUE		
Carry Forward	$ 4,009,727	$ 4,009,727
TRIF Revenue	19,200,000	21,112,242
TOTAL REVENUE	**$ 23,209,727**	**$ 25,121,969**
EXPENDITURES		
OPERATING BUDGET		
Personal Services	12,032,094	9,110,030
ERE	2,757,972	2,447,855
All Other Operating	5,269,661	4,500,225
TOTAL OPERATING BUDGET	**$ 20,059,727**	**$ 16,058,110**
CAPITAL BUDGET		
Building Renovation	150,000	150,000
Debt Service	3,000,000	3,000,000
COPs Lease Purchase Payment	-	-
TOTAL CAPITAL BUDGET	**3,150,000**	**3,150,000**
EXPENDITURES GRAND TOTAL	**$ 23,209,727**	**$ 19,208,110**
SUMMARY BY INITIATIVE		
Anyplace Access for Arizonans	$ 1,103,886	$ 1,081,762
Workforce Development: Educator Development	989,172	862,376
BIO5 Institute	7,764,660	6,220,377
Technology Transfer Infrastructure	1,060,372	762,795
Optical Sciences & Technology	4,566,298	3,627,920
Az Center for Information Science & Technology (ACIST)	4,987,541	4,350,084
Water Sustainability Program	2,737,798	2,302,796
Venture Fund		
EXPENDITURES GRAND TOTAL	**$ 23,209,727**	**$ 19,208,110**

FY 2005 UA ACTUAL TRIF EXPENDITURES
($ in millions)



UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
ANYPLACE ACCESS FOR ARIZONANS

	FY 2005 REV BUDGET		*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE					
Carry Forward	$ 103,886		$ 103,886	$ -	$ 25,212
TRIF Revenue	1,000,000	*	1,003,088	1,000,000	1,160,000
TOTAL REVENUE	**$ 1,103,886**		**$ 1,106,974**	**$ 1,000,000**	**$ 1,185,212**
EXPENDITURES					
OPERATING BUDGET					
Personal Services	$ 836,608		$ 739,818	$ 805,900	$ 703,088
ERE	179,700		212,253	157,200	200,200
All Other Operating	87,578		129,691	36,900	81,924
TOTAL OPERATING BUDGET	**$ 1,103,886**		**$ 1,081,762**	**$ 1,000,000**	**$ 985,212**
CAPITAL BUDGET					
Building Renovation	-		-	-	-
Debt Service	-		-	-	200,000
TOTAL CAPITAL BUDGET	**$ -**		**$ -**	$ -	**$ 200,000**
EXPENDITURES GRAND TOTAL	**$ 1,103,886**		**$ 1,081,762**	**$ 1,000,000**	**$ 1,185,212**

*based on estimated overrealized revenue of $3,088

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 is structured as projects of fixed duration rather than as ongoing research programs.

FY2005 GOALS/OBJECTIVES

Major programmatic goals for 2005 included creation of modules ready for use in science instruction related to optics, completion of the curriculum required for the online Nursing PhD, and expansion of course inventories available for other programs in Nursing and other fields. Management goals included development of plans for transitioning the Nursing program and the TRIAD team from TRIF funding to sustainable funding sources, and . Some projects funded under this initiative (e.g., creation of the high-speed link to Sierra Vista and establishment of online library reference) are considered complete and had no specific goals defined for this reporting period.

UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET

ANYPLACE ACCESS FOR ARIZONANS

	PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 ACTUAL*	*FY 2003 Actual*	*FY 2004 Actual*	*FY 2005 Projected*	*FY 2005 Actual*	*FY 2006 REVISED*
1.	Increased Capacity to deliver courses	pre-TRIF: 1.5 Mb/s to Sierra Vista	DS-3 line installed to Sierra Vista	45 Mb/s available	45 Mb/s available	45 Mb/s available	45 Mb/s available
2.	New Programs brought on line	2 new	2 new	2 new	2 new	1 new	1 new
2.a	New courses developed (Nursing, other fields)				(new metric)	30	30
2.b	Instructional modules developed (STC and others)				(new metric)	18	25
3.	Students enrolled in new programs	NA	19	39	60	60	80
3a	Enrollments in courses developed				(new metric)	889	1,000

FY 2005 RESULTS AND ACCOMPLISHMENTS

The online Nursing PhD is fully developed and enrolling to its capacity each fall. Together with the TRIAD team that assisted in development of the program, the online PhD will receive a significant award from a national organization at its fall meeting. To date, about 60 students have matriculated directly into the online PhD, but those already in the pipeline have also benefited. In Spring 2005, 80 students were enrolled in the Nursing PhD, including 2 from other UA Colleges taking the program's courses for minors. Additional Nursing programs benefiting from the initiative include the MS in Nursing and two certificate programs. The MS program now has its entire core sequence online, and the two certificate programs are completely online. For the STC, a large number of flash modules were created for use in various curricula, including K12 science curricula. Desire2Learn, the advanced course management platform acquired for the Nursing PhD, was extended as a service available to the entire institution, benefiting an additional 14,000 UA students in 250 courses. The 1 new program for FY 2005 was a non-credit smoking abatement program developed for Public Health; additionally, delivery infrastructure was created for the Critical Languages program. The TRIAD team presented a plan to transition from TRIF funding to a cost-recovery mode of operation and has begun seeking contracts with academic departments and other collaborators, and in FY2006 will begin on contract to help Public Health develop an online program in epidemiology.

UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA CENTER FOR INFORMATION SCIENCE AND TECHNOLOGY (ACIST)

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 887,541	$ 887,541	$ -	$ 921,805
TRIF Revenue	4,100,000	4,384,348	4,400,000	3,380,000
TOTAL REVENUE	**$ 4,987,541**	**$ 5,271,889**	**$ 4,400,000**	**$ 4,301,805**
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 3,036,152	$ 2,629,665	$ 2,167,300	$ 2,750,119
ERE	602,100	623,331	422,600	500,000
All Other Operating	1,349,289	1,097,088	1,810,100	100,000
TOTAL OPERATING BUDGET	**$ 4,987,541**	**$ 4,350,084**	**$ 4,400,000**	**$ 3,350,119**
CAPITAL BUDGET				
Building Renovation	-	-	-	-
Debt Service	-	-	-	951,686
TOTAL CAPITAL BUDGET	**$ -**	**$ -**	**$ -**	**$ 951,686**
EXPENDITURES GRAND TOTAL	**$ 4,987,541**	**$ 4,350,084**	**$ 4,400,000**	**$ 4,301,805**

*based on estimated overrealized revenue of $284,348

INITIATIVE OVERVIEW

The Arizona Center for Information Science and Technology, ACIST (formerly ITCDI) has assembled a remarkable group of researchers from multiple colleges across the campus to complement our native intelligence with intelligence embedded in systems we interact with. By leveraging the state of the art research capabilities of the University of Arizona Information Technology community, the ACIST mission is to advance creativity along three dimensions: massive data storage and management, cyber security and human-computer interaction.

Recognizing that globalization of organizations, as they operate in an information world, calls for a different work-force than what was needed in the last three decades, ACIST mission in social transformation includes developing future workforce, which supports the global competitiveness of firms that operate in this information world, and educating society on the privacy, security and ethical use of information.

Recognizing that research eventually has to be translated to support the economic development activities in the state of Arizona, ACIST has developed a strategy to move ideas to knowledge through research, and then translate this knowledge into specific work products.

UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA CENTER FOR INFORMATION SCIENCE AND TECHNOLOGY (ACIST)

FY 2005 GOALS/OBJECTIVES

Focused research in three defined themes; massive data storage and management, cyber security and human-computer interaction.
Increase local businesses awareness of ACIST activities.
Increase collaboration with business community.
Foster research working with external and internal partners.
Increase the return on investment by assuring matching commitments for funded projects.
Increase the effect on workforce development through education.
Increase the effect on economic development through tech transfer.
Advance Creativity and Influence Social Transformation.

PERFORMANCE MEASURES/DELIVERABLES	FY 2002 ACTUAL	FY 2003 Actual	FY 2004 Actual	FY 2005 Projected	FY 2005 Actual	FY 2006 REVISED
Return on Investment						
Licensing revenues attributable to ITCDI	*	*	*	*	*	100000
Number of ITCDI start-up companies	1	1	1	1	0	1
Numbers of patents filed attributable to ITCDI	0	2	2	2		1
Arizona sponsored research	*	*	*	*	$82,404	100000
Number or relocated and retained companies	0	2	0	1	0	*
Jobs attributable to relocation	*	*	*	*	0	*
Jobs attributable to start-ups	10	10	10	10	0	*
Jobs attributable to expansion	*	*	*	*	*	*
Number of new faculty experts attracted	*	2	*	1	5	4
New graduates from ITCDI related programs	0	69	236	250	224	200
ITCDI graduates benefiting from minors in related area	25	50	100	100	77	75
Undergraduates taking non-technical minor	50	100	150	200	111	100
Growth in ITCDI related graduate enrollment	5	5	5	5	4	4
New graduates from Information Sciences Program	0	0	0	50	0	0
Curriculum innovations program implemented	P1	39	40	40	6	5
Government project grants obtained	*	*	*	$3M	$3,480,410	$4M
SBIR/SBTT grants obtained	*	*	*	*	*	0
Grants/contracts from Industry	$120K	$234K	$1.3M	$2M	309860	500000
Value of Sponsorship obtained	$1.0M	$4.8M	$2.1M	*	*	*
Network infrastructure upgrades	P1	P2	P3	*	*	n/a

* Indicates metrics not yet estimable. these will be added in coordination with the office of Economic Development's development of the system by which growth will be tracked and attributed in the University/Community Proposition 301 Technology Report

FY 2005 RESULTS AND ACCOMPLISHMENTS

The Arizona Center for Information Science and Technology is pleased with the accomplishments of the last year. In January the Center moved to further define its focus and selected three research themes for the coming years. At that time three Faculty Coordinators were selected to lead each of these research themes. In March Dr. Mohan Tanniru was appointed as the Center's new director. Dr. Tanniru headed up a committee to write a new business pla for the Center for fiscal years 07-11. Under Tanniru's leadership the Center has created a new Board of Advisors that includes many influential business people from some of Arizona's most prestigious and successful companies. Dr. Tanniru has successfully engaged the local business community and is actively soliciting their input and advice regarding the Center's future research, economic development and workforce development projects.

Research: Increasingly successful funding of research experiences for undergraduates (REU) through obtaining National Science Foundation REU grants facilitated through ACIST seed funding.

The Hoffman E-Commerce Lab works with research labs and faculty to support various research initiatives. The lab provides computer hosting for numerous research projects and hosts a SharePoint research portal, allowing Eller researchers to collaborate internally and with researchers at peer institutions

The Hoffman E-Commerce lab has developed strong working relationships with local institutions including the Tohono O'odham Nation, the Senior Core of Retired Executives (SCORE), the YMCA and YWCA, the Urban League, and local school districts. The lab works with these different institutions to support workshops, provide technical consulting expertise, coordinate relationships with Eller Student interns, support Eller Students, and support the Eller Clut

Critical Network Infrastructure Assurance Projects. This research project developed an online network monitoring and analysis of network vulnerability. The tools developed in this project enable discovery of attack points (or vulnerabilities), characterize the behavior of critical infrastructure networks under attacks and faults and quantify their impact on network performance and services.

National Network Security Testbed. TRIF seed funding resulted in funding in the amount of $1M in FY 2005-06 by Hon. Jim Kolbe's Congressional Office for a national network security testbed. A testbed is required to enable the examination of emerging technologies and new systems planned for DoD information infrastructure. The University of Arizona was awarded an NSF grant to become the second university member o**Connection One,** which is a multi-university NSF Industry/University Cooperative Research Center (I/UCRC) focusing on telecommunication circuits and systems. TRIF funding was instrumental in convincing the NSF that ASU and the UA were serious about ensuring the success of the center. This multi-university center is poised to have a significant impact on the broader telecommunication industry, which has become an essential element of the state and national economy

Programs and Classes: Continued support to **Human Language Technology program** in Linguistics. **New interdisciplinary course** C SC/ECE/PHIL/PSYC/LING 696i: Computational Intelligence, approaches to development of intelligent systems. Maintained course offerings i**Microsoft .NET,** the technology of internet e-commerce, through offerings of C SC 386: C# Programming for the .NET Platform, and C SC 387: Developing Enterprise Web Applications. The **Hoffman E-Commerce Lab** plays a critical role in supporting the educational infrastructure in the Eller College. The lab focuses on a dynamic, service oriented role providing high-end technical resources in a flexible environment to educators throughout the college. This year the Lab provided unique services to approximately 2000 Eller students and over 30 Eller courses. These services included supporting over 20 MIS courses; providing a testing environment for 1200 B AD112L students; providing hands-on ERP Experience to MIS, SPAP, and Accounting students; and supporting a unique 24/7 educational environment incorporating lab computers with specialized software.**Graduate Certificate in GIScience**

The Geographic Information Sciences (GIScience) initiative represents a collaboration of the Department of Geography and Regional Development (GRD) with other UA units. TRIF funding enabled GRD to leverage two faculty hires with specializations in GIScience.**Professional Master's**

UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA CENTER FOR INFORMATION SCIENCE AND TECHNOLOGY (ACIST)

Degree in Human Language Technology (HLT), is a continuation of a previous Proposition 301 proposal “Enhancement of Teaching and Research in Computational Linguistics”. It is designed to proceed with the development of a new 2-yr Professional Masters degree in HLT within the Department of Linguistics. Student training in the field of geotechnology has grown substantially as a direct consequence of TRIF funding. A state-of-the-art Spatial Analysis Laboratory (SAL) funded by ACIST is now fully utilized in courses to train students to use geoinformation technology. New centralized program for on-line course development and management including design, new media and arts technology related courses. New 3D/Rapid Prototyping visualization course. Nev course in sound/audio technologies.

Interns: Now in its second year the ACIST intern program continues to be a tremendous success. Sixteen interns were placed with local companies to provide IT expertise to the companies, real world experience to the students and opportunities for collaboration in the future between ACIST and the local business community.

Conferences: ACIST supported the Human language Technology (HLT) Conference, an international event. The Sentence Processing Conference was an international conference brining in 2-300 leading researchers on language processing. Nine Arizona corporations with specific technologies relating to language processing were represented. The MIS 30 Year Anniversary event and Student Expo was supported by ACIST

UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

WORKFORCE DEVELOPMENT: EDUCATOR DEVELOPMENT PLAN

	FY 2005 REV BUDGET		FY 2005 ACTUAL	FY 2006 ORIG BUDGET	FY 2006 REV BUDGET
REVENUE					
Carry Forward	$ 189,172		$ 189,172		$ 129,267
TRIF Revenue	800,000	*	802,471	800,000	960,000
TOTAL REVENUE	**$ 989,172**		**$ 991,643**	**$ 800,000**	**$ 1,089,267**
EXPENDITURES					
OPERATING BUDGET					
Personal Services	$ 487,592		$ 393,949	$ 420,025	$ 477,667
ERE	117,814		93,405	97,866	119,778
All Other Operating	383,766		375,022	282,109	331,822
TOTAL OPERATING BUDGET	**$ 989,172**		**$ 862,376**	**$ 800,000**	**$ 929,267**
CAPITAL BUDGET					
Building Renovation	-		-	-	-
Debt Service	-		-	-	160,000
TOTAL CAPITAL BUDGET	**$ -**		**$ -**	**$ -**	**$ 160,000**
EXPENDITURES GRAND TOTAL	**$ 989,172**		**$ 862,376**	**$ 800,000**	**$ 1,089,267**

*based on estimated overrealized revenue of $2,471

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 2005 GOALS/OBJECTIVES

The goals for 2005 were (a) to continue to produce high quality math, science, and agriculture teachers for Arizona schools, and (b) to provide student support to the students to achieve the first goal.

UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

WORKFORCE DEVELOPMENT: EDUCATOR DEVELOPMENT PLAN

PERFORMANCE MEASURES/DELIVERABLES	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 Projected	FY 2005 Actual	FY 2006 REVISED
Workforce Contributions						
1. Completers of Secondary Science Teacher Prep	1	6	15[a]	20	8	20
2. Completers of Secondary Math Teacher Prep	3	7	10[a]	15	15	15
3. Completers in Elem. & Sec. Math/Sci Teacher Prep	29	28	27	30	55	28
4. Completers in Agricultural Teacher Prep	18	15	16	16	13	21

FY 2005 RESULTS AND ACCOMPLISHMENTS

Secondary Science

The TRIF monies continue to provide essential support for the College of Science Teacher Preparation Program (CoS TPP). In particular, the salaries money allows the program to include on its staff three highly experienced masters-degree level science teachers as adjunct instructors. These instructors co-teach courses in the program, coordinate the placement of preservice teachers in area middle and high schools, and provide frequent supervision of preservice teachers in area classrooms. The program could not maintain its current high level of student supervision and support without the work of these adjunct instructors.

The TRIF monies also provide essential support for the mentoring activities of practicing science teachers who partner with our program by allowing preservice teachers into their classrooms in three different capacities: observers assigned specific tasks, interns who assist for 8-week sessions twice during their programs, and student teaching which involves a full day, fifteen week teaching commitment. In FY 2005, 132 partner teachers received stipends in support of their work with our preservice teachers.

The enrollment goal of the secondary science teacher education program is to graduate 20 new science teachers a year by 2005, and we anticipate that we will meet this goal. In this past year enrollments in the program courses have continued to increase, and we anticipate 20 program completers by the end of FY 2006. The enrollments this year were:

Course	Enrollment
STCH 250	55
STCH 310	51
STCH 410	24
STCH 420	27
Student Teaching	9

Another important use of the TRIF monies is for student scholarships. Science majors with GPAs of 3.2 and above are eligible to apply for the $750/semester scholarships. Since the TRIF scholarship program began, we have awarded $50,250 to 38 students (some exceptional students have received scholarship renewals for multiple semesters). During the 2004-05 academic year (two rounds of scholarships), 19 scholarships were awarded to 14 students. The average student GPA for the 2004-05 scholarship awards was 3.60. The science majors represented by the 2004-05 scholarship awardees included the following: Astronomy, Chemical Engineering, Chemistry Education, Earth Science Education, Ecology & Evolutionary Biology, Geosciences, Microbiology, Molecular & Cellular Biology, Plant Science, Physics, and Physics Education. The Secondary Science program has received $247,000 in grants and gifts to provide additional support to the College of Science teacher preparation program.

Secondary Mathematics

The CRR has made significant progress in improving the state of mathematics education in Tucson. During the last four years the number of teachers participating in CRR programs has grown from 60 to 375, the number of participating schools has grown from 7 to 33. This has been made possible, in large part, by TRIF monies; TRIF has provided essential support for the CRR from its inception. Here is a statistical look at the progress the CRR has made in four years.

Recruiting

• 2004/5: 50 students are currently enrolled in courses leading to a mathematics teaching degree
The degree is now in the Department of Mathematics in the College of Science.

Retention

• 2001-2005: Of the 34 teachers who passed through the Induction Program at least three years ago, 28 are still teaching; 6 have left the profession. This is a flight rate of 18%, as compared to 34%, the national flight rate for teachers during their first three years.

Teach for Tucson Elementary

The Teach for Tucson (T4T) program prepares mathematics and science educators for schools in the metropolitan Tucson area. The program recruits career changers, that is, people with successful careers in other fields who wish to become teachers. The students typically range in age from 25-55 and come from many fields (e.g., military, financial services, engineering).

The elementary teacher education component of T4T, with help from TRIF funding, has been enormously successful. Including the 55 elementary and secondary graduates this year, we have provided 139 new teachers for the area's schools. Because of recent changes in federal law (No Child Left Behind Act) that requires increased subject matter requirements for middle school teachers of mathematics and science, we are finding that most of the teachers prepared in the T4T elementary program are actually preparing for careers as middle school teachers.

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WORKFORCE DEVELOPMENT: EDUCATOR DEVELOPMENT PLAN

Agriculture and Life Sciences

Since the 1994-95 school year the Department of Agricultural Education prepared 98 people to become teachers, 38 males and 60 females. Of those, six were Hispanic, three were Native American and one was Asian. The current Departmental Recruitment efforts include even more intensive efforts with under served populations. The current status of students suggests that the number of people eligible to teach during the next few years is predicted as:

2006 = 21 students
2007 = 15 students
2008 = 16 students

During the 2005 budget year, we used some TRIF funds to support students in the T4T elementary and secondary programs, programs that prepare secondary mathematics and science teachers for local area schools. These students who graduated in the spring of 2005 will serve to increase dramatically the number of mathematics and science teachers prepared with TRIF funds.

Most of our majors ultimately choose Agricultural Education after arriving at the university, usually as juniors. However, with the addition of Frank Santiago, as our recruitment program coordinator, we intend to increase our recruitment from the community colleges as well.

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TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
TECHNOLOGY TRANSFER INFRASTRUCTURE

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	**$ 260,372**	**$ 260,372**		**$ 300,048**
TRIF Revenue	800,000	802,471	800,000	960,000
TOTAL REVENUE	**$ 1,060,372**	**$ 1,062,843**	**$ 800,000**	**$ 1,260,048**
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 633,562	$ 369,999	$ 440,000	$ 633,998
ERE	150,023	105,969	101,280	123,000
All Other Operating	276,787	286,827	258,720	343,050
TOTAL OPERATING BUDGET	**$ 1,060,372**	**$ 762,795**	**$ 800,000**	**$ 1,100,048**
CAPITAL BUDGET				
Building Renovation	-	-	-	-
Debt Service	-	-	-	160,000
TOTAL CAPITAL BUDGET	**$ -**	**$ -**	**$ -**	**$ 160,000**
EXPENDITURES GRAND TOTAL	**$ 1,060,372**	**$ 762,795**	**$ 800,000**	**$ 1,260,048**

*based on estimated overrealized revenue of $2,471

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:

· 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.

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TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
TECHNOLOGY TRANSFER INFRASTRUCTURE

INITIATIVE OVERVIEW (continued)

· 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.
· Organize annual showcase events to highlight the many relationships and the interdependence between the University and high tech cluster organizations.
· Utilize the extensive network of relationships within Southern Arizona, Metropolitan Phoenix and throughout the state to provide a wide variety of flexible partnering opportunities.
· 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.
· 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.
· 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.
· Leverage the facilities and expertise of the Arizona Center for Innovation (formerly Tucson Technology Incubator) and the UA Science and Technology Park to mobilize businesses for launch.

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 2005 GOALS/OBJECTIVES

· Overall, OTT objectives are to continue to focus on operational excellence and enable new opportunities for research, education and technology transfer through the effective management of UA intellectual property.
· OTT will streamline marketing and outreach functions, one of which is to implement a new Web site applying interactive technology and Web forms.
· OTT will expand start-up and project activities by hiring a part-time, experienced technology transfer specialist to work primarily with one or more of the other TRIF-funded units.
· OTT will continue to enhance the opportunities for start-up formations through partnerships, internally and externally.
· UAED will complete three studies: (1) an evaluation of Tucson/Pima County's high technology development in comparison to peer cities (Competitive Cities Analysis), (2) an economic assessment of companies using licensed UA technology (Technology Impact Study), and (3) an economic assessment of the impact of the UA Science and Technology Park on Tucson and Pima County (UASTP Impact Study).
· UAED will host two policy forums in conjunction with the release of the Industry Cluster Report and UA Technology Transfer Study. Invited participants will include government and business leaders, economic development professionals, industry cluster representatives and academics.
· UAED will continue to provide strategic planning and technical assistance to the Southern Arizona Technology Council (SATC), Arizona Technology Council (ATC) and Arizona's industry clusters and will identify national and international best practices for Arizona's industry cluster organizations.
· UAED will host a seminar on contract manufacturing for start-up and emerging high technology companies in Southern Arizona.
· UAED will assist the Technology Development Research Institute (TDRI) to develop a rapid prototyping center at the University of Arizona Science and Technology Park. UAED and the UA Science and Technology Park will assist the Arizona Center for Innovation (AzCI) in expanding its operations and programs. AzCI will increase the number of client (start-up) companies from four (4) to eight (8), will further develop its student incubator and intern programs in collaboration with the Eller College of Management, and will establish a branch office of the Pima Community College Small Business Development Center within the AzCI offices at the UA Science and Technology Park

	PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 ACTUAL*	*FY 2003 ACTUAL*	*FY 2004 ACTUAL*	*FY 2005 Projected*	*FY 2005 Actual*	*FY 2006 REVISED*
1	Patent Applications	62	77	91	100	106	105
2	Patents Issued	8	12	14	18	10	22
3	Spin-Off Companies*	5	1	4*	6	5	8
4	Invention Disclosures	111	111	95	125	102	125
5	Licenses/Options*	30	24	25	30	32	35
6	Licensing Income	$714,415	$1,076,870	$1,008,621	$1,126,007	$1.175,915	$1,407,509

* Reporting since FY2003 corresponds to definitions used by

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TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
TECHNOLOGY TRANSFER INFRASTRUCTURE

FY 2005 RESULTS AND ACCOMPLISHMENTS

The major results and accomplishments for this year include:
· OTT continues to increase its IP-based transactions from OTT in comparison to previous years, including 46 Technology Transfer agreements; 32 of which are license and option agreements. Total license and option agreements are up 25% from FY 2004, with a minimal increase in licensing FTE's.
· OTT recorded $1 .18 Million in gross royalty revenues; this marks a steady revenue growth of close to 20% per year since the baseline year of FY 2000.
· OTT launched a redesigned OTT Web site featuring a higher level of automation and Web-based forms.
· OTT continued expansion of outreach activities including, but not limited to: (1) Hiring of a new part -time member, serving both as a senior technology transfer manager for OTT and a business development specialist for BIO5 to help improve OTT interactions between this central TRIF initiative; (2) Opening and supporting discussions in conjunction with BIO5 and the Salk Institute on translational agriculture; (3) Continuing the successful interactions between the McGuire Entrepreneurship Program by supporting six new OTT projects; (4) Launching, in conjunction with the McGuire Program, a new course in Intellectual Property Management and Business Entrepreneurship; (5) One of eight universities participating, by invitation from the Ewing Marion Kauffman Foundation, in a new pilot project in technology transfer infrastructure; (6) Initiating a new recognition event for university faculty, staff and students who participate in the technology transfer process.
· OTT received support from the Arizona Department of Commerce (ADOC) on the design and implementation of the state's technology web portal.
· OTT implemented a new marketing program, including a Web-based searchable archive of university technologies.
· UAED released the UASTP Impact Study outlining the beneficial economic impact of the UA Science & Technology Park on Tucson and Southern Arizona. The Competitive Cities Analysis is in progress and will be completed in 2006. Initiation of the Technology Impact Study will also occur in 2006.
· UAED hosted a Technology Development & Innovation Conference releasing the results of the Technology Transfer at the University of Arizona Study. A panel of experts was available for questions and comments. The luncheon included the inaugural presentation of the Technology Innovation Awards for Outstanding Faculty Entrepreneurs. The results of the High Technology Industry Clusters in Arizona will be presented to SATC in 2006.
· UAED continues to provide strategic planning and technical assistance to the Southern Arizona Technology Council (SATC), Arizona Technology Council (ATC) and Arizona's Industry Sectors.
· The Technology Development Research Institute (TDRI) was established at the Park, and focuses on unmanned air vehicle technology. The Arizona Center for Innovation increased the number of client companies from four to six. AzCI representatives made regular presentations to Eller College classes. Ten on-campus outreach luncheons directed toward faculty and student technology commercialization were sponsored, which resulted in fifteen follow up meetings regarding the Center.
· UAED also hosted the inaugural UA Innovation Showcase. The event highlighted university technology and its benefits to Tucson and Southern Arizona through the creation of new products and new jobs utilizing UA licensed technology. Featured companies were founded by UA alumni, faculty and students. The second UA Technology Innovation Awards Luncheon was held in conjunction with the Showcase. The establishment of a branch office of the Pima Community College Small Business Development Center within the AzCI offices is still under study.
· The seminar on contract manufacturing for start-up and emerging high technology companies in Southern Arizona has been rescheduled by UAED for 2006.

UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
BIO5 INSTITUTE

	FY 2005 REV BUDGET		FY 2005 ACTUAL	FY 2006 ORIG BUDGET	FY 2006 REV BUDGET
REVENUE					
Carry Forward	$ 1,764,660		$ 1,764,660	$ -	$ 2,523,351
TRIF Revenue	6,000,000	*	6,979,068	5,500,000	5,800,000
TOTAL REVENUE	**$ 7,764,660**		**$ 8,743,728**	**$ 5,500,000**	**$ 8,323,351**
EXPENDITURES					
OPERATING BUDGET					
Personal Services	$ 2,923,434		$ 2,040,752	$ 1,890,010	$ 3,415,000
ERE	648,137		553,983	368,552	1,126,950
All Other Operating	2,043,089		1,475,642	1,241,438	2,083,811
TOTAL OPERATING BUDGET	**$ 5,614,660**		**$ 4,070,377**	**$ 3,500,000**	**$ 6,625,761**
CAPITAL BUDGET					
Building Renovation	150,000		150,000	-	-
Debt Service	2,000,000		2,000,000	2,000,000	1,697,590
TOTAL CAPITAL BUDGET	**2,150,000**		**2,150,000**	**2,000,000**	**1,697,590**
EXPENDITURES GRAND TOTAL	**$ 7,764,660**		**$ 6,220,377**	**$ 5,500,000**	**$ 8,323,351**

*based on estimated overrealized revenue of $979,068

INITIATIVE OVERVIEW

The goals of the BIO5 Institute, formerly called the Institute for Biomedical Science and Biotechnology (IBSB), are to improve human health, nutrition and agriculture and to fuel economic development. In pursuit of its goals BIO5 is empowering researchers to do cutting-edge 21st Century Biology, defined as multidisciplinary, integrative, quantitative, translational and data-driven. The Institute is supporting research and education initiatives that address some of the most important, yet most complex, biological problems facing our society, including asthma, diabetes, cancer, the diminishing world food supplies, and degradation of our environment. New research initiatives in the molecular life sciences are being catalyzed, building on current strengths at The University of Arizona (UA). Researchers applying state-of-the-art technologies uncover new knowledge. By promoting the transfer of this new knowledge to specific problems, the Institute is encouraging the development of significant new applications in medicine and agriculture, benefiting society and fuelling economic development. Additional impacts on economic development include initiatives promoting entrepreneurship, training and educating the biotechnology workforce, and enhancing science literacy.

FY 2005 GOALS/OBJECTIVES (taken from 2004 TRIF report) and 2005 RESULTS/ACCOMPLISHMENTS

BIO5 will continue to work to accomplish its goals through its current initiatives and to establish new initiatives:

• Efforts to increase the number of nationally recognized UA faculty will continue with five strategic hires planned for the coming year.

Six (6) new faculty members were recruited to the UA (4 junior and 2 senior) in FY2005. Funds were also used to assist in the retention of two senior faculty members. These faculty have primary appointments in seven departments within four colleges.

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FY 2005 ACTUAL/FY 2006 BUDGET
BIO5 INSTITUTE

• Efforts to increase federal grant funding at the UA will continue. BIO5 will continue current programs and initiate new programs to enhance interactions across the UA campus and statewide to leverage competitiveness at the national level. BIO5 will continue the funding program for pilot interdisciplinary research to facilitate applications for new federal program project grants and center funding.

We met our projections in research dollars obtained from federal grants and exceeded our projections for corporate sponsored research (see table). The numbers reported represent funding obtained by faculty directly supported by BIO5. Our other 77 faculty brought in an additional $53M in federal grants including 7 SBIR/STTR grants, $3.9M in competitively-funded training grants, and $1.7M in corporate-sponsored research contracts. Seven interdisciplinary research projects were funded in FY2005.

Two new research initiatives will be launched to complement the current initiatives in Asthma and Agricultural Biotechnology, and implementation of the strategic plan for building bioinformatics and biostatistics will continue. Additional new initiatives will be launched to expand "enabling technologies" in support of campus and statewide research efforts, specifically, BIO5 will work to establish a high throughput chemical screening facility and a mammalian functional genomics facility. These research and enabling technology initiatives will have significant potential to impact all of the key areas emphasized in the Battelle AZ Biosciences Roadmap including Cancer, Neurobiology and Diabetes. To help oversee development of these initiatives a Scientific Advisory Board, composed of scientists external to the UA, will be established.

• Under the leadership of the new Director, BIO5's research initiatives have been defined and 111 faculty members participate in four research consortia: Bioengineering, Drug Discovery, Genome Structure and Function, and Quantitative Biology. In addition, a translational research in agriculture and medicine initiative has been launched. These research initiatives impact the key areas emphasized in the Battelle AZ Biosciences Roadmap. A 16- member Business Advisory Board was established, which is composed of prominent bioindustry scientists, business, finance,
and marketing experts. This board meets twice a year, and it has been very involved in the ABOR-mandated evaluation of BIO5 and the development of the next 5-year business plan. Formation of the Scientific Advisory Board was postponed until the research initiatives were fully defined, so as to ensure that scientists with expertise in the specific initiative areas are recruited to serve on the board. Two scientists have agreed to serve on the Scientific Advisory Board, and invitations have been sent out to three other potential Scientific Advisory Board members. This board will be formed and will meet during FY2006.

• Construction of the Thomas W. Keating Bioresearch Building will be monitored and assignments of the research programs and enabling technologies to the new building will be completed.

Construction on the 177,000 gsf building is continuing with completion anticipated in Spring 2006. Programming has been completed for 80% of the building, with the remaining 20% targeted for new hires that should be completed during FY2006-2007. When fully occupied, there will be 25 faculty-driven research programs in the building and a number of enabling technologies (genomics, informatics, proteomics) and facilities (Biosafety level 3, mouse functional genomics).

• Interactions will continue to be enhanced among scientists on campus and statewide (academic and industrial) by sponsoring two cutting-edge research symposia and several workshops.

BIO5 sponsored one (1) symposium and co-sponsored four (4) others, each with national and international speakers. These symposia were well attended by UA researchers and by industrial and academic scientists external to UA. BIO5 also sponsored three (3) interdisciplinary workshops, which promoted interactions across colleges.

(continued on next page)

FY 2005 GOALS continued

• Continue to promote biotechnology workforce development. 1) Increase the number and quality of graduate training programs and expand interactions with Pima Community College. 2) Develop a campus-wide graduate student records database for the life sciences to facilitate training grant applications. 3) Expand industry partnerships to establish more student internships. 4) Continue funding BIO5 interdisciplinary graduate fellowship program. 5) Partner with Eller Business School, the Office of Technology Transfer and the Professional Masters program to develop new curriculum to meet bioindustry's workforce needs.

1) Our graduate student recruitment and advertising activities have led to a number of the programs reporting an increase in the number of applicants, and 47% report an increase in the quality of successful recruits. BIO5 provided funds to seventeen (17) graduate students and two (2) postdoctoral research associates in the Biology, Math and Physics Research Initiative and it funded a Biostatistics internship program for undergraduate and graduate students. We worked with Pima Community College (PCC) to establish an internship program for Pima biotechnology students beginning in the summer of 2005. Our support is part of a newly awarded U.S. Employment and Training Administration grant awarded to JobPath and PCC.

2) We have continued to implement improvements to the Life Sciences Faculty Database established last year. The database now includes information on 538 faculty members and is used extensively by people internal and external to UA. The initiative to develop a campus-wide graduate student records database was postponed to develop a web-based system in support of recruitment. This system is used for meeting registration and management and has been made available to other life science groups.

3) BIO5 partnered with local bioindustry and UA depts. to facilitate internships in industry (four (4) industry-paid internships filled for Summer 2005).

4) Seven (7) BIO5 Graduate Research Awards were given to highly competitive graduate students conducting multidisciplinary research studies. The BIO5 Director's Award was created to enhance recruitment of top graduate students in life science research areas targeted by BIO5 and made two (2) awards to incoming students in FY2006.

5) Administrative support and funding for course development in regulatory affairs was provided for the Applied Bioscience Professional Masters Program. Funds were provided to MCB and the College of Science to reinstitute an undergraduate biotechnology course. In addition to the hundreds of undergraduates performing research in Institute faculty laboratories, the Institute provided partial support for UBRP (Undergraduate Biology Research Program), an exemplary federally-funded program placing top undergraduates into research labs. The Institute has also sponsored two projects that help undergraduate business students interface with scientists, developing their business and marketing skills.

• Continue to interface with Arizona Bioindustry. 1) A program will be launched to enable BIO5 to be a one-stop resource for connecting the statewide Arizona bioindustry with research interactions and training opportunities in the life sciences at the UA. 2) BIO5 will continue support of and interactions with the BioIndustry Organization of Southern Arizona.

Significant increases in industrial interactions and collaborations occurred through the efforts of the Director of Business Development, jointly hired by BIO5 and the Office of Technology Transfer in FY2005, and the new Institute Director. The Life Sciences Faculty Database provides the foundation for a new portal that caters to industrial researchers wishing to access information on all life sciences faculty at UA. BIO5 supported mixers bringing BIOSA members together with faculty and students at the UA, both the Director and the Business Development Director of BIO5 are members of the BIOSA Board of Directors, and BIO5 exhibited and presented at the 2005 annual Arizona BIO Expo meeting held in Phoenix.

• Continue to enhance and expand life science outreach activities. 1) Initiate the development of a web-accessible database to enhance accessibility to the science and math outreach resources at the UA. 2) Partner with Flandrau Science Center to initiate planning of the life sciences and biotechnology aspects of the Rio Nuevo Science Center.

1) We have established relationships with science outreach personnel and with the UA Learning Technologies Center to develop an interactive online database of math and science outreach resources.

2) We have hired a campus-wide Life Science Outreach Coordinator to coordinate all life science outreach activities. The position is based at Flandrau Science Center to assist in the planning and development of life science exhibits and programs for the new UA Science Center at Rio Nuevo. We have begun to build relationships with UA outreach personnel, members of Arizona's education community (including individuals at the school, district, county and state level) and UA faculty to promote involvement in UA science outreach programs and the development of the new UA Science Center.

3) Additional activities include: support for four (4) ongoing science outreach programs (M.S. degree program in General Biology, teacher internship in plant genomics, BIOTECH Project and the CATTS program) and two short-term outreach events (e.g., Daughters on Campus Day, Science House teacher workshop in Fungal Genomics).

• Continue media and government relations activities to increase awareness of UA life science capabilities and achievements and Arizona Bioindustry development strategies.

Extensive time has been spent promoting Arizona as a place to grow bioindustry. Highlights include: the Director was appointed to the Commerce and Economic Development Commission (CEDC) by the Governor, which was confirmed by the Senate; BIO5 took the lead in organizing the UA kiosk within the Arizona exhibit at the BIO2005 meeting in Philadelphia in June; BIO5 staff met with a number of trade delegations whose visits were organized by the Department of Commerce, the UA Office of Technology Transfer and Science and Technology Park; the Director visited England, visiting with three (3) university partners in Economic Development.

• Develop programs in partnership with Eller College of Management and the Office of Technology Transfer to increase faculty interest and involvement in tech transfer, licensing and protecting intellectual property.

A number of new programs were initiated during the past year: workshops and classes were held for faculty and students on how to take innovations to market; teams of entrepreneurship students were mentored as they developed business plans, marketing students from three classes worked on BIO5 projects, including market analysis of invention opportunities. These activities were coordinated by the Director of Business Development.

• Develop additional collaborations with sister universities, TGen and other research institutions within the state.

BIO5 faculty members are involved in multiple collaborations with faculty at TGen, ASU and NAU. In addition, the BIO5 Director has been interfacing with key administrators at TGen and Banner Health to explore additional potential collaborations.

UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
BIO5 INSTITUTE

	PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 ACTUAL*	*FY 2003 ACTUAL*	*FY 2004 ACTUAL*	*FY 2005 PROJECTED*	*FY 2005 ACTUAL*	*FY 2006 REVISED*
	Return on Investment						
1.	Federal Grants Received[1]	$1,447,470	$12,641,087	$22,518,442	$24,000,000	$24,667,680	$25,000,000
2.	Research Grant Proposals Pending	$19,106,683	$21,490,312	$43,322,036	$40,000,000	$60,363,719	$55,000,000
3.	New Faculty Hired	7	8	8	5	6	6
4.	Research Infrastructure Support	$0	$2,964,600	$2,611,498	$725,000	$725,000	$0
5.	SBIR/STTR Grants			2	2	1	2
	Economic Development						
6.	Corporate Sponsored Contracts		$105,090	$240,000	$240,000	$1,162,960	$1,000,000
7.	Industrial Interactions	2	64	96	90	129	125
8.	Industrial Collaborations	2	6	12	12	40	20
	Technology Transfer[2]						
9.	Invention Disclosures		57	46	50	65	50
10.	Licenses		75	17	20	25	20
11.	U.S. Patent Applications	1	37	63	60	50	60
12.	U.S. Patents Issued		7	11	10	10	10
	Workforce Contributions[3]						
13.	Training Grants[4]		3	2	2	1	2
14.	Undergraduate Degrees Awarded		658	705	700	733	735
15.	Undergrads w/Research Experience[5]		229	234	235	243	245
16.	Graduate Degrees Awarded		266	280	270	285	285
17.	Graduate Students Enrolled		1,183	1,299	1,300	1,753	1,750
	Promoting Life Science Potential						
18.	Media Coverage[6]		79/12	70/44	70/15	64/15	70/15
19.	Web enhancements		2	1	1	4[7]	2
20.	Presentations/exhibits		19	26	25	25	25
21.	Political Outreach[8]		21	7	10	21	20

[1] dollars received from research grants obtained by faculty that received support from TRIF in indicated fiscal year from NIH, USDA, NSF, DOE, etc.

[2] data represent activity of all UA life science departments

[3] data represent all UA life science departments

[4] FY05's funding environment was extremely competitive. 3 new proposals were not funded; however, each was requested to resubmit with easily-addressable changes

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

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

[7] BIO5 website redesign and upgrade, portal for industry interaction with faculty database, implementation of poster session registration site, and meeting registration interface

[8] includes formal events and individual briefings, presentations

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UNIVERSITY OF ARIZONA

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
OPTICAL SCIENCE AND TECHNOLOGY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward	$ 366,298	$ 366,298	$ -	$ 1,229,662
TRIF Revenue	4,200,000	4,491,284	4,200,000	4,040,000
TOTAL REVENUE	**$ 4,566,298**	**$ 4,857,582**	**$ 4,200,000**	**$ 5,269,662**
EXPENDITURES				
OPERATING BUDGET				
Personal Services	$ 2,156,839	$ 1,654,884	$ 2,200,000	3,232,004
ERE	605,906	554,182	589,600	859,482
All Other Operating	803,553	418,854	410,400	59,862
TOTAL OPERATING BUDGET	**$ 3,566,298**	**$ 2,627,920**	**$ 3,200,000**	**$ 4,151,348**
CAPITAL BUDGET				
Building Renovation	$ -	$ -	$ -	$ -
Debt Service	1,000,000	1,000,000	1,000,000	1,118,314
TOTAL CAPITAL BUDGET	**$ 1,000,000**	**$ 1,000,000**	**$ 1,000,000**	**$ 1,118,314**
EXPENDITURES GRAND TOTAL	**$ 4,566,298**	**$ 3,627,920**	**$ 4,200,000**	**$ 5,269,662**

*based on estimated overrealized revenue of $291,284

INITIATIVE OVERVIEW

(1) Research and Technology Development

· The funding of research projects to provide for prototyping and proof of concept regarding the following:
Photonics – novel nonostructures, photonic components, optical communication devices and systems, sensing devices for chemical and biological hazardous elements.
Imaging and Sensors – wide array of practical applications including ultraviolet and infrared sensors.
Astronomical Instruments – new enterprises that define the next generation of optics for large telescopes in space as well as operation of new generation ground based telescopes.
Increase number of world-class faculty in Optics
Increase major Optics research projects

(2) Workforce Development:

· Expansion of graduate and undergraduate optics programs
· UA educational programs to upgrade K-12 science education.
· MS Optics/MBA Dual Master's Program.
· Continue partnership with Pima Community College to bring about a new two year optics technician training program to facilitate the training of technicians for employment in the local optics market.
· 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 may be offered on a distance learning platform and can be delivered anywhere in Arizona.

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TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
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 Companies 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
· The Office of Technology Transfer and Berger Entrepreneurship Program offer a business plan development team to work with optics disclosed technologies.

FY 2005 GOALS/OBJECTIVES

The goal of this initiative is to support the development of optics and photonics in the New Economy in Arizona through enhanced research and development, workforce development, technology transfer and outreach. Specific objectives include:
. Enhance technology transfers
. Enhance outreach programs to Native Americans and underrepresented groups
. Enhance diversity in our faculty and student body
. Increase industrial affiliates and external funding
. Assist potential spin-off opportunities.

	PERFORMANCE MEASURES/DELIVEI	*FY 2002 ACTUAL*	*FY 2003 ACTUAL*	*FY 2004 ACTUAL*	*FY 2005 Projected*	*FY 2005 Actual*	*FY 2006 REVISED*
1	Recruit World Class Faculty Experts	3	6	0	2	1	2
2.	Increase Number of Industrial Affiliate Optics Companies	11	3	14	2	3	2
3.	New Spin-Off Companies in Optics	2	1	0	0	0	1
4.	New Federally Funded Major Optics Projects	2	2	11	1	2	1
5.	Number of Additional Graduate Students in Areas						
	Related to Optics	30	15	21	0*	0	0
6	Number of additional undergraduate majors in areas						
	Related to Optics	12	25	44	0*	25	0

*The number of undergraduate and graduate students have grown so rapidly in the first three years of this program that we are at the limit for number of faculty and space available. We surpassed our goals for the five year program.

FY 2005 RESULTS ANAD ACCOMPLISHMENTS

Industrial Affiliates

The number of Industrial Affiliates increased by 3 and included BAE Systems, Matsushita Electric Co. and Hewlett Packard.

Technology Transfer

10 patent disclosures were filed

1) "Novel approach for design and fabrication of single mode microstructured optical fibers," A. Schulzgen, N. Peyghambarian, V. Temyanko
2) “Image correction device,” M. Yamamoto, N. Peyghambarian, G. Li.
3) “A technique to enhance the electro-optic coefficient of polymers by using a Sol-Gel cladding layer to increase poling efficiency," N. Peyghambarian, R.A. Norwood, C. DeRose
4) “Low cost vertical Fabry-Perot polymer/sol-gel electro-optic modulators,” M. Fallahi, N. Peyghambarian, R.A. Norwood.
5) "Continuously tunable high-power (Multi-watts) high-brightness linearly polarized vertical-external-cavity surface emitting lasers (VESCELS)," J. Moloney, L. Fan, M. Fallahi.
6) "Novel approach for making optical fibers," N. Peyghambarian, A. Schulzgen, V. Temyanko.
7) "Information storage and retrieval device using macromolecules as storage media," J. Erwin, P. Khulbe, S. Kuebler, M. Mansuripur, J. Perry
8) "Bestrophin inhibitors as a therapy for Best Disease and Other Macular Dystrophies," A. Marmorstein
9) "Use of LED illumination for Light and Fluorescence microscopy," A. Marmorstein
10) "Ultra-bright optical see-through head-mounted displays using polarization," H. Hua.

Grants and Contract resulting from TRIF work

Photonics

AFOSR – “Photorefractive Polymer Composite Devices” $310,000
AFOSR - "Novel Designs and Coupling Schemes for Affordable High Energy Laser Modules" $1,500,000
AFOSR - "Nanophotonics Grant" $450,000
DARPA - "Montage Program" $1,666,667
DURIP - "Nanophotonics" $155,333
Intex – “Use of Nanostructured Carbon Coatings as Cathodes for OLEDs” $111,915
Georgia Institute of Technology – “Fast and Accurate Fabrication of Three-Dimensional Photonic and Phononic Crystals” $750,000
Johnson & Johnson – “Adaptive Eyewear” $405,143
Johnson & Johnson – “Prototyping of Electro-Active Lenses” $116,200
Keck Foundation - "Multiphoton Spectroscopy" $200,000
Nippon Sheet Glass – $25,000
Nitto Denko – $108,750
National Institute of Health – “Novel Optical Coherence Holographic Imaging” $391,871
NSF - "Science and Technology Center" $650,000
NSF - "Novel Passive and Active Photonic Crystal and High Index-Contrast Structures for Broadband Communications" $183,889
NSF - "Development of Fiber Optics Chip Spectrometer" $250,000
NSF - "Spin Opto-Electronics" $133,333
NSF - "ITR grant on Optical Communication" $500,000
NSF - "Integration of New Hybrid Materials Containing Biomolecules for the Fabrication of Optical Sensor Systems" $200,000
NSF - "Research Experiences for Undergraduates (REU)" $50,000

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FY 2005 ACTUAL/FY 2006 BUDGET
OPTICAL SCIENCE AND TECHNOLOGY

Imaging

Macular Degeneration Foundation, "Microcurrent stimulation and photoreceptor viability" $23,522
NIH - “Diagnosis of Ovarian Cancer by Confocal Microendoscopy” $1,461,993
NIH - “Ultra-Miniature Multi-Modal Endoscopes” (R21 CA113974) $966,763
NIH/NIBIB - Training Grant: “Biomedical Imaging and Spectroscopy” (BMIS) $1,305,932
NIH R01 - Competing renewal of “Bestrophin in retinal disease” $1,885,208
NIH R03-EY014898 "A new method for retinal imaging" $452,000
Phillip Morris External Research Program – “Fundus Fluorescence Ratiometry as a Diagnostic Tool for Macular Degeneration” $672,235
NIH/NIBB - P41 EB002035 - "Center for Gamma-ray Imaging" $4,448,143
NIH/NIBIB - "Optimizing Medical Imaging Systems for Estimation Tasks" $1,066,966
R01 CA112679 - "Cancer Diagnostic Imaging with NIR Fluorescent Agents" $193,591
NSF - "Development and assessment of fovea-contingent head-mounted displays" $350,510
Semiconductor Technology Associates Inc., CA - "Backside Processing of SBSS CCDs" $267,000
UC Davis - "Characterization of LSST CCDs" $49,209
WIYN Consortium - "Orthogonal Transfer Array Optimization for QUOTA" $95,000
NIH/NCCAM - Pilot Project "Assessing Biofield Therapies by Biophoton Imaging" $13,000
NIH/NCCAM - Pilot Project "Biophoton Imaging Microscope Development and Piloting" $17,000
ASOSR - "Exploiting AO in Deformable Secondaries," $8,255,000
JPL - "Interferometry with the LBT," $3,070,439
JPL - "Beamsplitter Development for TPF," $369,440
JPL - "A Common-Path Phase Sensing Testbed for TPF," $842,169
NASA - "An Astronomical Search for the Essential Ingredients of Life," $4,957,149
NASA - "The First Nulling and Simultaneous Differential Imaging Survey for Massive Planets Around Nearby Stars," $222,000
NASA - "High Dynamic Range Thermal Infrared Surveys for Zodiacal Dust and Giant Planets around TPF-Candidate Stars," $997,081
NSF - "Development of IR-Optimized AO System for the Baade 6.5 m Telescope," $1,371,547
NSF - "The 20/20 Telescope: A new Concept for the GSMT," $1,898,586

Outreach

- TRIF-sponsored four high school students attending the Optics Summer Camp
- Participated in a Tech Fair at Desert View High School in the Sunnyside School District where students at different grade-levels were able to gather information about different Degree programs being offered at the College of Optical Sciences.
- College of Optical Sciences TRIF faculty, graduate and undergraduate students instructed elementary age students how to make kaleidoscopes and were taught basic optics principles.
- Twenty 9 to 12th grade high school students were taught by TRIF and other faculty about optics during a 5 day optical sciences camp.
- We partnered with Diné College and the Upward Bound Program by providing two instructors to teach the science and math module of this 6 week program on the Navajo Reservation.
- Diné College students participated in an NSF funded REU program at the U of A.
- 120 seventh grade students from Old Vail Middle School were given the opportunity by an OSC graduate student to utilize their math skills to better understand basic optics principles and to observe other optics demonstrations.

Additional outreach activities of specific TRIF supported faculty members

Marmorstein, A.:
- Speaker, Campana Del Rio, Low Vision Group, 6/15/05
- KSAZ radio, “Cele Petersen’s Tucson Star of the day” recorded 4/19/05
- Attendance at annual Merienda of Los Donas De Los Descendientes De La Presidio De Tucson, 4/17/05

- Guest Appearance on Arizona Illustrated, KUAT-TV, Tucson 4/6/05
- Guest Speaker, La Canoa Lion’s Club, Green Valley, AZ, 11/16/04
- Speaker, Public Service Seminar on Age-Related Macular Degeneration, Green Valley AZ, 04/17/04
- Speaker, Pride of Scottsdale Lion’s Club, Scottsdale, AZ, “Breakthroughs in Eye Disease Research Seminar Series”, 3/30/04
- Guest Speaker, Green Valley Lion’s Club, 03/11/04
- Lobbying Arizona Congressional delegation for Vision Issues with ARVO and NAEVR, Washington DC, 1/23/04
- KSAZ radio, “Celle Petersen’s Tucson Star of the Day” 1/28/04

Hua, H.:
- Guest Speaker, OSA ‘2005 International Symposium on Optical Memory and Optical Data Storage.

Creath, K.:
- Program Track Chair, Advanced Metrology, AM04 Optical Science and Technology, SPIE's 49th Annual Meeting 2-6 Aug 2004, Denver, CO
- Chair, AM201 Interferometry XII: Techniques and Analysis, AM04 Optical Science and Technology, SPIE's 49th Annual Meeting, 2-6 Aug 2004, Denver, CO
- Program Committee, AM202 Interferometry XII: Applications, SPIE's 49th Annual Meeting, 2-6 Aug 2004, Denver, CO
- Program Committee, EPE108 5457 Optical Metrology in Production Engineering, 27-30 Apr 2004, EPE04 Photonics Europe, Strassbourg, France
- Program Track Chair, Advanced Metrology, AM05 Optical Science and Technology, SPIE's 50th Annual Meeting, 31 July-4 Aug 2005, San Diego, CA
- Chair, AM200 The Nature of Light: What is a Photon?, AM05 Optical Science and Technology, SPIE's 50th Annual Meeting, 31 July-4 Aug. 2005, San Diego, CA
- Program Committee, Optical Sensing and Metrology, CLEO Europe-EQEC 2005, 12-17 June 2005, Munich, Germany
- Member, Steering Committee, Center for Frontier Medicine in Biofield Science, an NIH/NCCAM funded center at the University of Arizona.
- Serving on the editorial board for the "Journal of Holography and Speckle", published by American Scientific Publishers, editor-in-chief, Chandra S. Vikram.
- Editor of K. Creath and J. Schmit, Interferometry XII: Techniques and Analysis, SPIE Proc. 5531, (SPIE, Bellingham, WA 2004).
- OSA, Dekker Foundation Student Scholarship Committee, Chair 2005, Member 2003-2004

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UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
WATER SUSTAINABILITY PROGRAM

	FY 2005 REV BUDGET		FY 2005 ACTUAL	FY 2006 ORIG BUDGET	FY 2006 REV BUDGET
REVENUE					
Carry Forward	$ 437,798		$ 437,798	$ -	$ 594,514
TRIF Revenue	2,300,000	*	2,459,512	3,500,000	3,900,000
TOTAL REVENUE	**$ 2,737,798**	#	**$ 2,897,310**	**$ 3,500,000**	**$ 4,494,514**
EXPENDITURES					
OPERATING BUDGET					
Personal Services	$ 1,957,907		$ 1,280,963	$ 2,520,000	$ 2,333,178
ERE	454,292		304,732	540,000	656,355
All Other Operating	325,599		717,101	440,000	652,571
TOTAL OPERATING BUDGET	**$ 2,737,798**		**$ 2,302,796**	**$ 3,500,000**	**$ 3,642,104**
CAPITAL BUDGET					
Building Renovation					
Debt Service					$ 852,410
TOTAL CAPITAL BUDGET	**$ -**		**$ -**	**$ -**	**$ 852,410**
EXPENDITURES GRAND TOTAL	**$ 2,737,798**		**$ 2,302,796**	**$ 3,500,000**	**$ 4,494,514**

*based on estimated overrealized revenue of $159,512

INITIATIVE OVERVIEW

The mission of the Water Sustainability Program (WSP) is to provide science-based technical, economic, legal, and policy expertise necessary for water development, use, and conservation in a rapidly growing, increasingly urban state. It is a university-wide collaboration of researchers and educators that is coordinated by four University of Arizona water centers. Stronger relationships across disciplines result in research innovations and interdisciplinary solutions to real world problems in the state. Enhancing the sustainability and safety of Arizona's water supply is critical to the state's economic development and quality of life.

The University of Arizona is internationally recognized for its expertise in water-related sustainability planning, research, and technology development. The WSP builds on these strengths to provide services within the state that enhance educational opportunities, sustain economic growth, and provide state-of-the-art scientific information in support of water management activities. Key WSP initiatives include an internally competitive grants program focused on resolving Arizona specific water issues, a water education and outreach program targeted at K-12 students, the general public, public policy-makers, and professionals, a student fellowship program, and the individual water centers' research, outreach and education programs. New components in FY 2006 will include strategic directed initiatives to address unmet water resource and education needs in the state and a recruitment, retention and research effort to attract world class faculty, invest in state-of-the-art research facilities, and develop a new multidisciplinary water institute. Collaboration with government agencies and the private sector to provide direct dollar matches and in-kind contributions to support these initiatives is an important strategy to supplement TRIF funds and broaden the program's reach.

UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
WATER SUSTAINABILITY PROGRAM

FY 2005 GOALS/OBJECTIVES

The fundamental goals of the WSP 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. WSP 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 sector entities, supported by a skilled workforce that is educated at the University of Arizona; and stronger relationships across disciplines within the University of Arizona, which will result in research innovations to create new business initiatives. Water is essential to the health and well-being of local industries and its citizenry, and WSP 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 other academic programs will provide a high-quality workforce for water resources companies and agencies;
- industry 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 economic development and growth.

	PERFORMANCE MEASURES/DELIVERABLES	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 PROJECTED	FY 2005 ACTUAL	FY 2006 REVISED
	Return on Investment						
1.	Government project grants obtained	0	$244,700	$450,000	$500,000	$260,000	$500,000
2.	Additional funding obtained	$400,000	$88,000	$350,000	$250,000	$180,000	$250,000
3.	Water Center leveraged funds **	$1,540,000	$1,500,000	$1,705,000	*	$3,040,000	$3,500,000
	Technology Transfer						
4.	State-wide water conference	1	1	1	1	1	1
5.	Patent Applications in process	*	*	*	3	4	4
	Companies Relocating/Economic Development						
6.	Number of relocated research offices						
7.	Jobs attributable to relocation						
8.	Jobs attributable to expansion				2	0	0
9.	Number of new faculty recruited	1	0	1	1	1	5
	Workforce Contributions						
10.	Number of undergraduate employment/research opportunities	0	9	22	22	40	45
11.	Number of graduate employment/research opportunities	1	16	54	50	75	85
12.	Number of post graduate employment/research opportunities	2	2	3	3	3	4

	Curriculum Innovations/Education							
13.	Expanded delivery of K-12 water education programs							
	- number of facilitators trained	0	40	40	40	41	41	
	- number of teachers trained/student contacts	0	475/26,500	735/26,340	700/26,000	790/29,230	790/29,000	
	-Water festivals held/# schools/#students participating**			2/18/1,700	5/27/2,300	6/33/2,920	6/56/4,750	
14.	Interdisciplinary curriculum modules developed	0	7	5	3	1	0	
	- number of teachers trained/student contacts	0	9/390	105/1,490	200/1,500	201/2,595	200/1,500	
15.	New rural water resources centers established	2	2	0	2	0	2	
	Partnerships							
16.	New collaborations with institutions/industry	*	*	75	30	36	36	

* Indicates metrics not available ** New measure added

FY 2005 RESULTS AND ACCOMPLISHMENTS

In FY2005, $2.3M in TRIF funds was budgeted for the WSP. $1.2M was awarded to top UA researchers and staff across campus to fund 11 new Arizona specific projects in water research, education and outreach, selected through a competitive expert review process and to fund 17 continuing multi-year projects. Eight new grants projects, were selected to receive $480K beginning in FY2006. The grants program now entering year three has funded 39 projects in 6 colleges and 24 departments. Results are just beginning to be realized: new technologies to detect and mitigate viral and bacterial pathogens and chemical contaminants in water such as perchlorate, nitrates and arsenic are underway; a water supply model is ready for application by water managers in Arizona communities; information to improve irrigation efficiencies is available to the green industry and agricultural sector; impacts of water quantity and quality on the environment are being assessed; the State Drought Plan and supporting documents were developed in collaboration with ADWR; and K-12 water education programs and public access to water education materials such as booklets, fact sheets, workshops, a CD, a DVD, and websites was expanded. Support for students represents approximately 40% of funds through 52 graduate assistantships, 48 paid student positions and the Student Fellowship Program that awarded $100,000 to outstanding graduate (5) and undergraduate (4) students to encourage and support their studies on Arizona specific water issues. An increase in funding in FY2006 allowed for development of 2 new program components: a recruitment effort to attract 5 new, world class faculty, 3 in Hydrology, 1 in Atmospheric Sciences, and 1 in Geography in addition to the Environmental Law faculty hired in FY2005; the second new component - strategic center Directed Initiatives is intended to fill specific unmet needs in research and education in the state. Highlights of the Education and Outreach Program, and specific TRIF funded activities of the four coordinating water centers follow.

UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
WATER SUSTAINABILITY PROGRAM

Education and Outreach Program
• Completed the first phase of a cohesive AZ Water Information System - the UA WaterWeb found at www.arizonawater.org, that provides a searchable water expertise directory, and information on water related centers, facilities, organizations and degree programs in Arizona. The next phase, a FAQ section is under development.
• New WSP funded publications and 20 WSP grants project bulletins were created and posted on the WSP website: www.uawater.arizona.edu. for public access.
• Strengthened industry outreach through development of i) student-designed mobile technology displays, demonstrating key applications of clean room technology and industrial water reuse, and ii) a major assessment of industry education/training/continuing education needs by direct contact, questionnaires and focus groups.
• Expanded water education activities through support of Project WET (Water Education for Teachers), a trained volunteer network across the state that provides workshops and materials for K-12 teachers, and through support of Water Festivals, one day of hands-on water education activities for 4th and 5th grade students in multiple communities.
• A showcase of state water programs, a "Water Expo" event, was organized at the state capitol for Arizona Legislators and the public, featuring water research, education, and conservation displays provided by 37 leading municipal, state and federal water agencies and the three state universities.
Water Center Activities
Each Water Center receives direct funding to pursue interdisciplinary research, education and outreach programs. Accomplishment highlights are listed.
Center for the Sustainability of Arid and semi-Arid Hydrology and Riparian Areas (SAHRA) - water sustainability
• Development and submission of 3 patent applications and a software trademark application for water sensors to more precisely monitor water usage.
• Measurement of the impacts of the proximity to and quality of riparian habitat on home values and impacts on actual water use.
• Educational DVD produced that is a computer simulation of the hydrology of caves, on display at Kartchner Caverns State Park and available to the public..
Engineering Research Center for Environmentally Benign Semiconductor Manufacturing (ERC) - water use and reuse for the semi-conductor industry
• Collaboration with microelectronics firms on water use optimization and low-water rinse technologies.
• Joint project work with ASU on the development of low-water wafer cleaning that uses 85% of the water in IC industry.
• Development of a new low-energy water purification method for removing organics and hardness-causing species.
Water Quality Center (WQC) - water security and human pathogen detection
• Developed a molecular method of detection for Naegleria fowleri, the protozoan parasite responsible for two deaths in Maricopa County.
• Developed data set on the fate and survival of the SARS virus in water.
• Developed data set on fate and transport of endocrine disruptors in effluent put into the Santa Cruz River.
• Evaluated new water purification technology.
• Initiated development of state-of-the-art Water Village to enhance water security.
Water Resources Research Center (WRRC) - outreach and education on critical water issues; expertise on state and regional water management and policy
• Annual statewide water conference, spring 2005, entitled, "Water in the Environment", attracting 300 participants (elected officials, water professionals, university and government agency personnel, citizens), held in Tucson. Initiated planning to address water conservation at the next conference to be held in Phoenix.
• Analyzed water needs and public benefits of environmental restoration projects in Arizona for federal agencies.
• Improved use of climate data and stakeholder engagement in several Arizona communities for better management of Colorado River water and other water sources.
• Extensive outreach through delivery of numerous briefings, presentations, workshops, articles, columns, interviews, and media coverage, on state water management particularly in rural areas, climate and drought, and water policy issues to diverse audiences.

UNIVERSITY OF ARIZONA
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2006 BUDGET
VENTURE FUND

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 ORIG BUDGET*	*FY 2006 REV BUDGET*
REVENUE				
Carry Forward			N/A	$ 190,000
TRIF Revenue	$ -	$ 190,000	$ -	$ -
TOTAL REVENUE		**$ 190,000**	**$ -**	**$ 190,000**
EXPENDITURES				
OPERATING BUDGET				
Personal Services		$ -	$ -	$ 137,560
ERE		-	-	52,440
All Other Operating		-	-	-
TOTAL OPERATING BUDGET	**-**	**-**	**-**	**190,000**
CAPITAL BUDGET				
Building Renovation				
Debt Service				-
TOTAL CAPITAL BUDGET	**$ -**	**$ -**	**$ -**	**$ -**
EXPENDITURES GRAND TOTAL	**$ -**	**$ -**	**$ -**	**$ 190,000**

*based on estimated FY05 overrealized revenue of $190,000

INITIATIVE OVERVIEW

As a result of the *projected* over-realized revenue in FY05, request was made and received to use a portion of these funds to establish an additional initiative that would allow the university to take advantage of new targets of opportunity identified by the four research initiatives (Bio5, ACIST, Optical Science and Water). Selection of specific opportunity will be made once revenue projections have been confirmed and transferred to the university in August.

FY 2005 GOALS/OBJECTIVES

Allow current research initiatives to expand their work within the scope of current business plan.

PERFORMANCE MEASURES/DELIVERABLES

Expand on existing performance measures of competing research initiatives.

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ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

SUMMARY

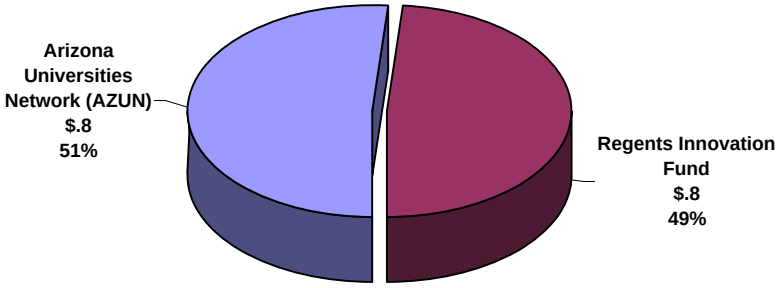
	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	$ 2,120,301	$ 2,120,301	$ 718,965
TRIF Revenue	3,315,000	2,189,599	1,400,000
Subtotal	$ 5,435,301	$ 4,309,900	$ 2,118,965
Transfer to NAU January 2005	1,615,559	1,615,559	-
TOTAL REVENUE	**$ 3,819,742**	**$ 2,694,341**	**$ 2,118,965**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 243,803	$ 229,886	$ 75,000
ERE	46,289	42,431	9,007
All Other Operating	55,369	22,248	108,231
Subtotal Operating Budget	345,461	294,565	192,238
GRANTS/PROJECTS:			
Arizona Universities Network	938,079	685,456	300,000
Regents Innovation Fund	1,307,242	639,173	1,626,727
Subtotal Grants/Projects	2,245,321	1,324,629	1,926,727
EXPENDITURES GRAND TOTAL	**$ 2,590,782**	**$ 1,619,194**	**$ 2,118,965**
SUMMARY BY INITIATIVE			
Arizona Universities Network	$ 1,086,040	$ 833,417	$ 400,000
Regents Innovation Fund	1,504,742	785,777	1,718,965
EXPENDITURES GRAND TOTAL	**$ 2,590,782**	**$ 1,619,194**	**$ 2,118,965**

ABOR CENTRAL OFFICE

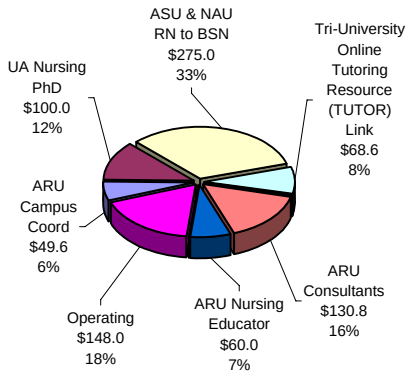
TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 BUDGET / ACTUAL
SUMMARY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*
REVENUE		
Carry Forward	$ 2,120,301	$ 2,120,301
TRIF Revenue	3,315,000	2,189,599
Subtotal	5,435,301	4,309,900
Transfer to NAU January 2005	(1,615,559)	(1,615,559)
TOTAL REVENUE	**$ 3,819,742**	**$ 2,694,341**
EXPENDITURES		
OPERATING BUDGET		
Personal Services	$ 243,803	$ 229,886
ERE	46,289	42,431
All Other Operating	55,369	22,248
Subtotal Operating Budget	**345,461**	**294,565**
GRANTS/PROJECTS		
Arizona Universities Network (AZUN)	938,079	685,456
Regents Innovation Fund	1,307,242	639,173
Subtotal Grants/Projects	**2,245,321**	**1,324,629**
TOTAL OPERATING BUDGET	**2,590,782**	**1,619,194**
CAPITAL BUDGET		
Building Renovation	-	-
Debt Service	-	-
TOTAL CAPITAL BUDGET	**-**	**-**
EXPENDITURES GRAND TOTAL	**$ 2,590,782**	**$ 1,619,194**
SUMMARY BY INITIATIVE		
Arizona Universities Network (AZUN)	$ 1,086,040	$ 833,417
Regents Innovation Fund	1,504,742	785,777
EXPENDITURES GRAND TOTAL	**$ 2,590,782**	**$ 1,619,194**

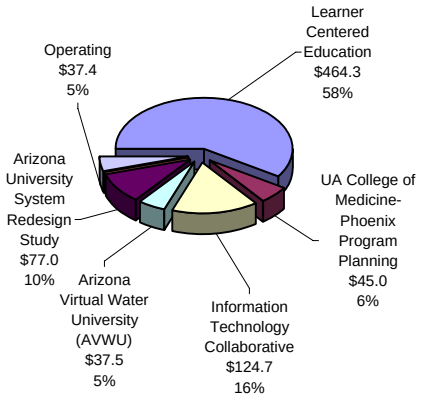
FY 2005 CENTRAL OFFICE ACTUAL TRIF EXPENDITURES
($ in millions)



ARIZONA UNIVERSITIES NETWORK (AZUN)
(in thousands)



REGENTS INNOVATION FUND
(in thousands)



ARIZONA BOARD OF REGENTS

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA UNIVERSITIES NETWORK (AZUN) (formerly Arizona Regents University (ARU))

	FY 2005 REV BUDGET	*FY 2005 REV BUDGET*	*FY 2006 REV BUDGET*
REVENUE			
Carry Forward	$ 1,615,559	$ 1,615,559	$ -
TRIF Revenue	2,315,000	1,182,680	400,000
Subtotal	$ 3,930,559	$ 2,798,239	$ 400,000
Transfer to NAU January 2005	1,615,559	1,615,559	
TOTAL REVENUE	**$ 2,315,000**	**$ 1,182,680**	**$ 400,000**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 117,291	$ 117,291	
ERE	23,782	23,782	
All Other Operating	6,888	6,888	100,000
Subtotal Operating Budget	147,961	147,961	100,000
GRANTS/AID TO OTHERS			
ARU Campus Coordinators Salary, ERE	49,573	49,573	-
UA Nursing PhD	100,000	100,000	-
ASU & NAU RN to BSN	200,000	275,000	-
Tri-University Online Tutoring Resource (TUTOR) Link	68,600	68,600	-
Web Development	1,466	1,466	-
ARU Consultants	130,817	130,817	-
ARU Nursing Educator	60,000	60,000	-
New Programs	327,623	-	-
Arizona Reach Out Grants (ARRO)	-	-	300,000
Subtotal Grants/Aid to Others	938,079	685,456	300,000
		-	-
EXPENDITURES GRAND TOTAL	**$ 1,086,040**	**$ 833,417**	**$ 400,000**

INITIATIVE OVERVIEW

Arizona Universities Network (AZUN), formerly Arizona Regents University (ARU), 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

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA UNIVERSITIES NETWORK (AZUN) (formerly Arizona Regents University (ARU))

FY 2005 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.
3. To implement two consultant studies to provide guidance in the development of online student services and identification of the path for the long-term growth and structure of Arizona Regents University.

PERFORMANCE MEASURES/DELIVERABLES	*FY 2002 ACTUAL*	*FY 2003 ACTUAL*	*FY 2004 ACTUAL*	*FY 2005 ACTUAL*	*FY 2006 PROJECTED*
Return on Investment					
Funds leveraged	0	$89,070			
Workforce Contributions					
Number of courses provided	520	1,471	1,531	1,483	
Number of certificate and degree programs provided	9 / 14	13 / 24	20 / 23	9(4)	
Number of electronically-delivered programs system-wide	23	37	45	49	
Number of enrollments	12,353	35,616	40,761	50,313	
Number of new students system-wide				7,514	
Grant funds distributed to universities	$1,378,394	$1,760,328	$1,169,162	$554,639	
ARRO grants distributed to universities					$300,000
Curriculum Innovations					
Number of coordinated student services provided	not available	6	9	10	
Number of faculty offering distance learning courses	not available	400	437	450	

FY 2005 RESULTS AND ACCOMPLISHMENTS

In March 2004, ABOR engaged the services of consultants to develop a roadmap for Arizona Regents University (ARU) and to evaluate systemwide online student services. The results of the consultant studies were presented to the Board at a study session on September 29, 2004. On November 18, 2004, the Board authorized the ABOR Executive Director to enter into a memorandum of understanding to outsource the major operations of ARU to NAU, while retaining oversight at the ABOR central office. On December 23, 2004, the ABOR Executive Director and NAU President John Haeger executed a Memorandum of Understanding between ABOR and NAU Regarding the Management of Arizona Regents University (ARU), for the period January 1, 2005, through June 30, 2008.

ARIZONA BOARD OF REGENTS

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

ARIZONA UNIVERSITIES NETWORK (AZUN) (formerly Arizona Regents University (ARU))

Arizona Regents University (ARU) was renamed Arizona Universities Network (AZUN) after consideration of a marketing study. The ARU/IT Subcommittee, now Information Technology/Arizona Universities Network Committee (IT/AZUN), approved a revised business plan, made major modifications to the web portal, and endorsed the WCET (Western Cooperative for Educational Telecommunications) report on next steps in developing the AZUN Portal.

The Regents approved establishment of an annual grant program, called Arizona Regents Reach Out (ARRO), through the IT/AZUN Committee to offer faculty an opportunity to submit proposals for innovation in distance learning. FY 2005 ARRO grants to the universities will total $300,000.

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ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

REGENTS INNOVATION FUND SUMMARY

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	$ 504,742	$ 504,742	$ 718,965
TRIF Revenue	1,000,000	1,006,919	1,000,000
TOTAL REVENUE	**$ 1,504,742**	**$ 1,511,661**	**$ 1,718,965**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 126,512	$ 112,595	$ 75,000
ERE	22,507	18,649	9,007
All Other Operating	48,481	15,400	8,231
Subtotal Operating Budget	197,500	146,644	92,238
GRANTS/PROJECTS:			
Learner Centered Education	777,060	454,667	803,893
The University of Arizona College of Medicine-Phoenix Planning	212,500	44,965	250,000
Information Technology Collaborative	154,000	100,000	169,000
Academic Program Management System	15,000	-	-
Arizona Virtual Water University (AVWU)	37,500	37,500	150,000
Emerging Issues	111,182		253,834
Subtotal Grants/Projects	1,307,242	637,132	1,626,727
EXPENDITURES GRAND TOTAL	**$ 1,504,742**	**$ 783,776**	**$ 1,718,965**
SUMMARY BY INITIATIVE			
Learner Centered Education	$ 793,560	$ 462,250	$ 820,393
The University of Arizona College of Medicine-Phoenix Planning	212,500	44,965	250,000
Information Technology Collaborative	180,000	124,655	180,000
Arizona University System Redesign Study	110,000	76,981	-
Academic Program Management System	20,000	-	-
Arizona Virtual Water University (AVWU)	37,500	37,500	150,000
Emerging Issues	111,182		253,834
Operating	40,000	37,425	64,738
EXPENDITURES GRAND TOTAL	**$ 1,504,742**	**$ 783,776**	**$ 1,718,965**

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ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

REGENTS INNOVATION FUND

Learner Centered Education

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	$ 293,560	$ 293,560	$ 718,965
TRIF Revenue	500,000	500,000	101,428
TOTAL REVENUE	**$ 793,560**	**$ 793,560**	**$ 820,393**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 9,400	$ 5,180	$ 9,400
ERE	1,600	828	1,600
All Other Operating	5,500	1,575	5,500
Subtotal Operating Budget	16,500	7,583	16,500
GRANTS:			
FY 2006 LCE Grants			483,500 -
FY 2005 LCE Grants	483,500	257,258	226,241
FY 2004LCE Grants	252,634	248,626	4,008
FY 2003 LCE Grants	(1)	(38,896)	36,895
FY 2002 LCE Grants	40,927	(12,322)	53,249
Subtotal Grants	**$ 777,060**	**$ 454,666**	**$ 803,893**
EXPENDITURES GRAND TOTAL	**$ 793,560**	**$ 462,249**	**$ 820,393**

FY 2005 INITIATIVE OVERVIEW

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. The grant cycle ran for 18 months, from January 1 through June 30 of the following year in 2002, 2003 and 2004. For 2005 and 2006, the cycle has been modified to run from April through September. Final reports for the grants awarded in January 2004 are due by July 31, 2005; and for grants awarded in March 2005 by October 31, 2006. The deadline for submitting proposals for grants from the 2006 cycle is October 12, 2005.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

REGENTS INNOVATION FUND

Learner Centered Education

FY 2005 GOALS/OBJECTIVES

Grants are solicited in four categories considered critical to the full implementation of learner-centered education throughout the university system:

1. Faculty professional development
2. Course/program modification or development
3. Research on learner-centered education
4. mproved assessment of learner-centered education at the course or program level

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

An evaluation of the first three years of the program (2002-2004) will be completed in December 2005 and presented to the Board in March 2006.

FY 2005 PERFORMANCE MEASURES/DELIVERABLES		*FY 2002 Cycle ACTUAL*	*FY 2003 Cycle ACTUAL*	*FY 2004 Cycle * PROJECTED*	*FY 2005 Cycle** PROJECTED*	*FY 2006 Cycle*** PROJECTED*
	Curriculum Innovations					
1.	Number of courses modified to LCE focus	95	114	107	80	80
2.	Faculty addressing curriculum through LCE grants	188	53	100	140	150
	Workforce Contributions					
3.	Students affected by LCE grant projects	14,000	6,000	6,000	8,000	8,000

*Final reports due July 31, 2005.

**Final reports due October 31, 2006.

***Final reports due October 31, 2007.

FY 2005 RESULTS AND ACCOMPLISHMENTS

59 proposals were submitted for the 2005 grant cycle. 14 were approved for funding.

Generally, requests for funding have fallen in the lower funding range. Awards for $25,000 or less make up approximately 45% of the awards, compared to 40% in 2003 and 75% in 2004. There were two tri-university awards for the maximum amount of $100,000 each.

Projects are funded for an 18-month period. Approximately half of the funds were released during FY 2005. The remainder will be released during FY 2006 upon receipt of the progress reports required of each grantee on or before December 15, 2005.

To date, it is estimated that, with two cycles complete and the 2004 cycle just finishing, more than 300 faculty have developed or redesigned nearly 400 courses using LCE methods and approaches, involving approximately 20,000 students during the life of these grants. As these courses continue, more students will be impacted each semester.

Regents Innovation Fund
2005 LCE Grant Awards

University	LCE Project Title	Project Summary	Grant Award
ASU	The Learning Strategies Toolbox: Supporting students' career identity development	Nationwide both teachers and pilots are in short supply. A motivated, student-centered learning environment will support both recruiting and retaining students. The primary goal of the Learning Strategies Toolbox is to assist faculty in creating a motivated, learner-centered classroom environment. The Learning Strategies Toolbox will do this by: 1) To better understand the individual learning needs and strengths of students in Aeronautics and Education, 2) to use that understanding to develop targeted learning and motivational strategy instruction tailored to the needs of students in each program, 3) to assist faculty in both Colleges in providing strategy and motivational instruction as part of content coursework.	$ 24,520
ASU	Learner-Centered Assessment Tools	To develop and disseminate a web-based toolbox of assessment materials and instruments for faculty.	$ 25,000
ASU Polytechnic	The Software Enterprise: Preparing Industry-Ready Software Engineers	This proposal requests support for curriculum development and assessment of a practice-oriented, multi-semester sequence dubbed the "Software Enterprise". The primary goal of the work described in this proposal is to develop the materials and the environment to implement an instructor-facilitated, learner-centric model for the Software Enterprise. Graduates should exhibit a higher degree of applied competencies in industry-relevant areas, and as an indirect measure, should have more success in career placement and advancement.	$ 24,041
ASU	Learner-Centered Task-Oriented Language Instruction: Converging Technology and Immersion	The ASU Critical Languages Institute (CLI) and Department of Language and Literatures (DLL) Slavic Section are proposing to design, build, implement and test a suite of learner-centered and task-oriented course units for Bosnian/Croatian/Serbia, Polish, and Russian. These three languages will constitute a test case with envisaged migration of the objects to other languages taught at the CLI and DLL. The deliverables include software, including templates transferable to other languages, other courseware (fact sheets, tables, compendia of links), unit lesson plans, instructions, as well as statistical data and assessment from in-class testing.	$ 46,871
NAU	History Learning Lab	This project is designed to develop a Lab to provide learner-centered activities and graduate assistant mentors to help undergraduate students to improve their research and writing skills within the discipline of history.	$ 24,978
NAU	Transforming the Freshman Year: A University-Wide Program to Promote Pedagogies of Engagement	Twenty faculty who teach freshman courses will be a part of a year-long professional development program leading to incorporation and learner-centered pedagogy in their classes. A "Focus on the Freshman Year" speaker and seminar series will involve cohort faculty in examining freshman learning, freshman year, and LCE principles. Students will be impacted through course and curricular innovations.	$ 49,964

University	LCE Project Title	Project Summary	Grant Award
NAU	On-Line Homework to Improve Student Quantitative Reasoning	The project proposes to improve student mathematical learning in the Liberal Studies Mathematics course MAT 114 - Quantitative Reasoning by using the WeBWork online homework system. Problems applicable to the material in MAT 114 will be written during the Summer of 2005 and then used in MAT 114 during the 2005-2006 academic year.	$ 24,946
NAU	The Virtual Environmental Learning Space: Phase III	We propose to build a Virtual Electronic Learning Space (VELS) that will move ecological science education at NAU into the 21st century by greatly enhancing learning experiences, exploring a novel integration of the research and learning communities, and promoting the development of interdisciplinary course content.	$ 25,000
UA	Online Mathematics Training Modules for the Biology Project	Collaborative effort between the Department of Biochemistry & Molecular Biophysics, and the Interdisciplinary Program in Applied Mathematics to develop online mathematics training modules to complement the Biology Project website; and also to develop a more general learner-centered on-line mathematics curriculum for biologists. The program will be developed by teams of faculty and students from both academic units with specific timelines and outcome objectives.	$ 25,000
UA	Personal Response Devices in General Chemistry Discussions	Introduce personal response systems (clickers," Classroom Performance System - CPS) in the General Chemistry Lecture discussion sections by developing a question bank specifically designed for discussion sections on the major topics of freshman chemistry with the aim of increasing student participation, as well as providing the instructor with immediate feedback about the students' understanding. Funds are requested for time during the summer to construct these question banks.	$ 22,917
UA	The Writing Network	Expanding the learner-centered paradigm to create partnerships of university recruitment and academic programs with local high schools, the Writing network will enable undergraduate English education majors, Writing Center tutors, and composition students to collaborate with high school students on the skills they need to pass the AIMS test and attend the university.	$ 24,999
UA	Enhanced Student Learning with Internet GIS Enrichment and Participatory GIS Collaboration	This project uses interactive web-based technologies to enhance student learning with new curricular content in six geographic information systems (GIS) courses offered by multiple units at UA. We seek to develop interactive course project web sites to enhance the collaboration of student teams with community partners as they complete applied GIS projects for these partners.	$ 25,000
TRIU	Mediated Geographies: Critical Pedagogy and Geography Education	The aim of the program is to create an integrated series of innovative undergraduate courses in each of the Geography departments in Arizona's three universities using the learner-centered strategy of "critical pedagogy." Students will be encouraged to examine critically mediated materials (advertisements, television shows, films), as it specifically relates to geographic processes and theories. Students will engage in group work and conduct peer reviews at an end-of-semester conference. The PIs will evaluate this feedback and use it to modify the pedagogical approach for future courses within the departments and, potentially, to the broader university.	$ 95,700

University	LCE Project Title	Project Summary	Grant Award
TRIU	Tri-University Collaboration on Learner-Centered Practice: Creating Learning Communities Among Faculty and Students	The intent of the project is two-fold: (1) to develop a critical mass of faculty who will engage collaboratively in the study of learner-centered instructional practice, apply what they learn, assess the impact of what they learn, and share their learning with other faculty and graduate teaching assistants, and (2) for those faculty to develop and implement an LCE advocacy plan for each of their campuses that will ultimately bring faculty and institutional culture to actively embrace more learner-centered approaches to college education.	$ 100,000

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ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
REGENTS INNOVATION FUND

Information Technology Collaborative

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	$ -	$ -	$ -
TRIF Revenue	180,000	180,000	180,000
TOTAL REVENUE	**$ 180,000**	**$ 180,000**	**$ 180,000**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 25,000	$ 22,092	$ 10,000
ERE	-	2,393	-
All Other Operating	1,000	170	1,000
Subtotal Operating Budget	**26,000**	**24,655**	**11,000**
GRANTS/PROJECTS:			
Network Management System	-	100,000	169,000
To be designated	154,000	-	
Subtotal Grants/Projects	**154,000**	**100,000**	**169,000**
EXPENDITURES GRAND TOTAL	**$ 180,000**	**$ 124,655**	**$ 180,000**

FY 2005 INITIATIVE OVERVIEW

The Arizona Auditor General has recommended that the Board of Regents exercise more oversight of university information technology. An IT project approval process and extensive reporting requirements for IT expenditures are now in place. Collaborative IT projects that can improve service and/or result in cost savings hold ongoing particular interest to the Regents. Numerous possibilities exist for the efficient and effective use of seed money, including the continued use of consultants to develop an architecture for planning future IT development. Other examples include a second security assessment of tri-university network security and various other IT projects at the three universities.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
REGENTS INNOVATION FUND

Information Technology Collaborative

FY 2005 GOALS/OBJECTIVES

1. Second security assessment of Tri-University Network and Server Environment.
2. Development of an Information Technology Architecture facilitates the application of IT to university initiatives and projects. Its goal is to aid in the efficient and effective implementation of technology on our campuses by describing a direction for current and future IT activities, supported by underlying principles, standards, and best practices.

FY 2005 PERFORMANCE MEASURES/DELIVERABLES

		FY 2005 PROJECTED	*FY 2005 ACTUAL*
	Return on Investment		
1.	Second Security Assessment of tri-university computer environment	Completed	Completed
2.	Information Technology Architecture Development	Completed	Completed
3.	Partnerships/Collaborations among the three universities	Completed	Completed

FY 2005 RESULTS AND ACCOMPLISHMENTS

1. Second security assessment in 2005 is necessary to determine the effectiveness of modifications that were made in the initial assessment. In the spring of 2003, the Arizona Board of Regents approved an RFP process for selecting a vendor to perform security scans for all three university networks. The RFP competition was won by Cisco Systems, who performed the security scans during the '03-'04 winter.
2. The Tri-University Architecture document will remain highly flexible to accommodate the ever-changing nature of IT. Its goal is to aid in the efficient and effective implementation of technology on our campuses, supported by underlying principles, standards, and best practices. It will further facilitate tri-university collaboration efforts by establishing a common vision for the future of IT on our campuses. The use of technology is a large and growing element of the universities' environment and overall expenditures. Arizona's universities collectively are interested in increasing service quality and saving money through the best possible use of IT.

FY 2006 INITIATIVE OVERVIEW

An IT project approval process and extensive reporting requirements for IT expenditures are now in place to facilitate Board oversight of university IT projects. Collaborative IT projects that can improve service and/or result in cost savings continue to be of particular interest to the Regents. The design, training, and implementation of SharePoint for the central office and related university departments is an area that is being researched as one possibility for these improvements. Numerous possibilities exist for the efficient and effective use of seed money, such as the continued use of a consultant to develop an architecture for planning future IT development at the three universities. $11,000 has been set aside for such a consultant in FY 2006.

FY 2006 GOALS/OBJECTIVES

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

1. Updating the IT Architecture.
2. Implementation of SharePoint.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
REGENTS INNOVATION FUND
Information Technology Collaborative

FY 2006 PERFORMANCE MEASURES/DELIVERABLES

		FY 2006 PROJECTED
	Return on Investment	
1.	Performance measures will be provided when final IT projects are selected.	TBD
	Completion of IT Architecture	
	Implement three major central office functions using SharePoint.	
	Partnerships/Collaborations	
2.	Performance measures will be provided when final IT projects are selected.	TBD

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ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL/FY 2006 BUDGET

REGENTS INNOVATION FUND

The University of Arizona College of Medicine-Phoenix Planning

	FY 2005 BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	$ -	$ 100,000	$ -
TRIF Revenue	212,500	112,500	250,000
TOTAL REVENUE	**$ 212,500**	**$ 212,500**	**$ 250,000**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ -	$ -	$ -
ERE	-	-	-
All Other Operating	-	-	-
Subtotal Operating Budget	**$ -**	**$ -**	**$ -**
GRANTS/PROJECTS:			
Ryden Architects, Inc. (ASU final payment)	-	657	-
Molera Alvarez Group	72,000	44,308	-
To be determined	103,000		250,000
Subtotal Grants/Projects	175,000	44,965	250,000
EXPENDITURES GRAND TOTAL	**$ 175,000**	**$ 44,965**	**$ 250,000**

FY 2005 INITIATIVE OVERVIEW

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

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2004 ACTUAL/FY 2005 BUDGET
REGENTS INNOVATION FUND
The University of Arizona College of Medicine-Phoenix Planning

FY 2005 GOALS/OBJECTIVES

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

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

FY 2005 RESULTS AND ACCOMPLISHMENTS

On August 4, 2004, then-Regents President Gary Stuart, UA President Peter Likins, and ASU President Michael Crow signed an historic Memorandum of Understanding (MOU) Regarding the Expansion of Medical Education and Research in Phoenix. Renovation of the three former Phoenix Union High School buildings began in April 2005 on the Phoenix Biomedical Campus and is scheduled for completion in June 2006. Planning and programming continued for ABC 1, to house UA and ASU researchers for the expansion of the UA College of Medicine in Phoenix. University and ABOR central office staff have been involved in the various task forces of the Arizona Commission on Medical Education and Research (ACMER) appointed by Governor Napolitano to coordinate the activities of the various stakeholders for this expansion and to help guide establishment of the Phoenix Biomedical Campus (PBC). The Commission was charged to develop a plan to implement the principles enumerated in the Memorandum of Understanding. The first class of 24 medical students in the UA College of Medicine-Phoenix Program is scheduled to begin in July 2007.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL
REGENTS INNOVATION FUND
Arizona University System Redesign Study

	FY 2005 BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	$ 60,000	$ 60,000	**$ -**
TRIF Revenue	50,000	50,000	**-**
TOTAL REVENUE	**$ 110,000**	**$ 110,000**	**$ -**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 56,250	$ 54,519	$ -
ERE	13,500	8,807	-
All Other Operating	40,250	13,655	-
Subtotal Operating Budget	110,000	76,981	-
GRANTS/PROJECTS:			
Subtotal Grants/Projects	-	-	-
EXPENDITURES GRAND TOTAL	**$ 110,000**	**$ 76,981**	**$ -**

FY 2005 INITIATIVE OVERVIEW AND ACCOMPLISHMENTS

On June 3, 2004, the Board conducted a special study session to review the anticipated growth in student enrollments through the year 2020 and a proposed redesign of Arizona's university system to accommodate this growth. At the June 3 meeting, the Board authorized a feasibility and planning study of the redesign proposal presented at the study session, and of any other meritorious proposals submitted to the Board. At the June 24, 2004, Board meeting, the Board reviewed the proposed scope and organizational structure of the feasibility and planning study.
Between August 2004 and December 2004, the 20-member ABOR Feasibility and Planning Study Work Group worked on its tasks, primarily through three subcommittees: Needs Assessment and University Capacity; State Experiences; and Evaluation Criteria. At its January 26, 2005, meeting, the Work Group received reports from its three subcommittees. With these reports, Phase I: Collect Data and Information, was completed.

In the second phase of the Feasibility and Planning Study, the Work Group's task was to develop one or more redesign options, using the data and input gathered in the first phase. In February 2005, the Work Group unanimously approved a draft proposal and moved it forward for public comment. Eight public forums were held in locations around the state, and stakeholder groups organized meetings to review and comment on the new redesign proposal. Throughout the process, Arizona Board of Regents staff and Work Group members met with Arizona legislators, local elected officials, and the Governor's policy advisors.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)

FY 2005 ACTUAL

REGENTS INNOVATION FUND

Arizona University System Redesign Study

In April 2005, the Feasibility and Planning Study Work Group completed its assignment and submitted a redesign recommendation to the Arizona Board of Regents. At its April 2005 meeting, the Board approved the proposed redesign recommended by the ABOR Feasibility and Planning Work Group. The final report, titled "A Redesigned Public University System," was published and distributed in July 2005. At the September 2005 Board meeting, the universities will present for review and approval their implementation plans for the university redesign initiative.

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

FY 2005 PERFORMANCE MEASURES/DELIVERABLES		***FY 2005 PROJECTED***	***FY 2005 ACTUAL***
	Return on Investment		
1.	Final redesign plan approved by Board	Completed	Completed
	Leveraging of Investment		
2.	Obtain WICHE/Lumina Foundation/Ford Foundation funds	$ TBD	$3,000
	Workforce Contributions		
3.	System redesign to meet Arizona's workforce needs	Completed	Completed
	Partnerships/Collaborations		
4.	Collaborative process among universities and with stakeholder groups	Completed	Completed

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL
REGENTS INNOVATION FUND

Academic Program Management System

	FY 2005 BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	$ -	$ -	$ -
TRIF Revenue	20,000	20,000	-
TOTAL REVENUE	**$ 20,000**	**$ 20,000**	**$ -**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 5,000	$ -	$ -
ERE	-	-	-
All Other Operating	-	-	-
Subtotal Operating Budget	5,000	-	-
GRANTS/PROJECTS:			
External Consultant/Web Based Design	15,000	-	-
Subtotal Grants/Projects	15,000	-	-
EXPENDITURES GRAND TOTAL	**$ 20,000**	**$ -**	**$ -**

FY 2005 INITIATIVE OVERVIEW

The Board of Regents is responsible for the approval of all new academic programs that may be offered at the three universities. In addition, Board Policy 2-202.A requires a comprehensive Academic Degree Program Inventory (API) that includes all academic degree programs that have been approved for planning or for implementation at the respective universities. The Inventory indicates the institution, college, and Classification of Instructional Program (CIP) code. The CIP code is a national classification used for federal reporting and for identifying duplicate programs within the university system. The funds being requested will be used to develop a data base that is accessed from the Web. This data base would ensure an up-to-date API for prospective students and for use by the universities and would provide a history of changes. Currently, there is not a reliable system to record the approval of new programs or to track changes to existing programs.

The API is the first component of a proposed comprehensive Academic Program Management System for the university system.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 BUDGET
REGENTS INNOVATION FUND
Academic Program Management System

FY 2005 GOALS/OBJECTIVES

Develop the Academic Program Inventory component of a proposed Academic Program Management System.

FY 2005 PERFORMANCE MEASURES/DELIVERABLES		*FY 2005 PROJECTED*	*FY 2005 ACTUAL*
1.	**Identify Vendor**		
	Announcement RFP	November 2004	*
2.	**Develop Data Base and Reporting Mechanism**		
	Test functionality	January 2005	*
3.	**Data Entry**		
	Hire hourly personnel to enter historical data	March 2005	*
4	**Academic Program Inventory**		
	Available on Web	May 2005	*

* Project was deferred to a later date due to central office staffing issues and other project priorities.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
REGENTS INNOVATION FUND
Arizona Virtual Water University (AVWU)

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	**$ -**	**$ -**	**$ -**
TRIF Revenue	-	37,500	150,000
TOTAL REVENUE	**$ -**	**$ 37,500**	**$ 150,000**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ -	$ -	$ -
ERE	-	-	-
All Other Operating	-	-	-
Subtotal Operating Budget	-	-	-
GRANTS/PROJECTS:			
Arizona Department of Commerce	$ -	37,500	-
The University of Arizona	-	-	150,000
Subtotal Grants/Projects	-	37,500	150,000
EXPENDITURES GRAND TOTAL	**$ -**	**$ 37,500**	**$ 150,000**

FY 2005 OVERVIEW

$37,500 of FY 2005 TRIF Regents Innovation Funds was approved by the Board in April 2005 for allocation to the Arizona Department of Commerce to support the development by the Battelle Technology Partnership Practice Group of a business plan for Arizona Virtual Water University (AVWU).

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

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
REGENTS INNOVATION FUND

Arizona Virtual Water University (AVWU)

The proposed mission of AVWU will be three-fold:

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

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

AVWU's Core Group, comprising representatives from ASU, NAU, UA, SRP, Intel, the Arizona Departments of Water Resources, Environmental Quality, and Commerce, and the Governor's Office, has determined that a business plan for AVWU is a critical first step and plans to engage the services of the Battelle Technology Partnership Practice Group to perform this work.

The estimated cost of Battelle's work is approximately $75,000. The Director of the Department of Commerce has requested financial support from the Arizona Board of Regents in the amount of $37,500. An identical request will be made by the Commerce Director to the Commerce and Economic Development Commission (CEDC) at its May 24, 2005, meeting.

FY 2005 ACCOMPLISHMENTS

The AVWU business plan should be completed by Battelle in early FY 2006 and work will begin to implement and actualize that plan.

FY 2006 INITIATIVE OVERVIEW

$150,000 will be allocated to The University of Arizona in FY 2006 to support first-year planning for AVWU, including the salary and administrative expenses for an executive director. Arizona State University, Northern Arizona University, and the University of Arizona are working with the Governor's Office, the Arizona Departments of Water Resources, Environmental Quality, and Commerce, and private sector partners Intel and SRP to develop AVWU. AVWU will unite the world-class water programs and services at each university into a single, virtual "supercenter" of knowledge and expertise. It will focus on improving the quality of life in Arizona and around the world through water research, education, and technology development.

FY 2006 GOALS/OBJECTIVES

1. Provide first-year planning support for hiring of AVWU executive director.

ABOR CENTRAL OFFICE

TECHNOLOGY AND RESEARCH INITIATIVE FUND (TRIF)
FY 2005 ACTUAL/FY 2006 BUDGET
REGENTS INNOVATION FUND
Operating

	FY 2005 REV BUDGET	*FY 2005 ACTUAL*	*FY 2006 BUDGET*
REVENUE			
Carry Forward	**$ -**	**$ -**	$ -
TRIF Revenue	40,000	40,000	64,738
TOTAL REVENUE	**$ 40,000**	**$ 40,000**	**$ 64,738**
EXPENDITURES			
OPERATING BUDGET			
Personal Services	$ 30,862	$ 30,804	$ 55,600
ERE	7,407	6,621	7,407
All Other Operating	1,731	-	1,731
Subtotal Operating Budget	40,000	37,425	64,738
GRANTS/PROJECTS:			
To be designated	-	-	-
Subtotal Grants/Projects	-	-	-
EXPENDITURES GRAND TOTAL	**$ 40,000**	**$ 37,425**	**$ 64,738**

FY 2006 OVERVIEW

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

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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.

D. Formats for Submission of Proposals

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

1. The requested duration of the proposed project or activity;

2. Proposed detailed performance measures, desired outcomes, and proposed methodology for evaluating progress in attaining the desired outcomes; and

3. A detailed budget for each proposed project or activity, including the identification of funds which are intended to be either continuing, multi-year, or one time only.

E. Special Factors

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

1. Priority shall be given to proposals that involve collaboration between and among the universities and/or collaboration with private industry or public sector agencies.

2. The Board may authorize awards for an annual or multi-year basis, but in no event will the Board make an award on a multi-year basis without incorporating specific requirements regarding periodic review and assessment or progress in implementing the proposed project or activity and in attaining the desired outcomes.

3. Funding may be used to pay salaries only for persons directly involved in projects or activities funded under this program that would otherwise not be funded through general fund appropriations.

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.