

TECHNOLOGY AND RESEARCH INITIATIVE FUND  
(TRIF)

LEARNER CENTERED EDUCATION



September 1, 2009

LEARNER CENTERED EDUCATION (LCE) INITIATIVE

In 2001, the Arizona Board of Regents authorized \$500,000 of the TRIF Regents Innovation Fund from Proposition 301 monies for grants to faculty to improve and expand learner-centered education throughout the university system.

The purpose of learner-centered education is to change the dynamics of student-faculty interaction to optimize student learning and learning outcomes (focusing on what is learned rather than on what is taught); to utilize technology to create opportunities for student learning; to utilize student peer interaction (collaborative learning); and to create more active learning venues for students beyond the standard lecture and discussion method.

Learner-Centered Education Grants: The First Five Years

Over five funding cycles from 2002 through 2006, 11 to 20 grants were awarded annually to faculty for projects which addressed learner-centered education in the areas of faculty development; course or program modification; assessment; or research. Funding for the last year of this five-year period culminated in September 30, 2007. Examples of these projects include:

- The Writing Network (UA), in which undergraduate English education majors, Writing Center tutors, and composition students worked with high school students on the skills they need to pass the AIMS test;
- Learner-Centered Assessment tools (ASU Poly and ASU West), which created a comprehensive library of online tools for developing, assessing, and improving learner-centered education; and
- TIMES (Training Engineering and Math for Engineering Success, NAU), which tested a online training activities and tools designed to improve student performance in their entry-level engineering foundation courses.



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

**Program Evaluation.** Consistent with other TRIF projects, an evaluation of the LCE grant program was conducted in 2006 to provide direction for the program's future. The

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# LEARNER-CENTERED EDUCATION AWARDS, 2002-2009

## LCE PROJECTS AWARDED 2002-2006

	2006		2005		2004		2003		2002		TOTAL	
	#	\$	#	\$	#	\$	#	\$	#	\$	#	\$
<b>ASU</b>	2	\$49,911	4	\$120,432	3	\$99,690	8	\$214,191	4	\$90,000	<b>21</b>	<b>\$574,224</b>
<b>NAU</b>	5	165,536	4	124,888	5	104,985	2	60,319	7	141,922	<b>23</b>	<b>597,650</b>
<b>UA</b>	3	84,948	4	97,916	6	141,139	5	125,930	8	195,137	<b>26</b>	<b>645,070</b>
<b>NAU/UA</b>	0	0	0	0	0	0	1	24,883	0	0	<b>1</b>	<b>24,883</b>
<b>ASU/UA</b>	1	48,871	0	0	0	0	0	0	0	0	<b>1</b>	<b>0</b>
<b>NAU/ASU</b>	0	0	0	0	1	49,400	1	50,000	0	0	<b>1</b>	<b>99,400</b>
<b>TRI-U</b>	0	0	2	195,700	1	99,997	1	95,555	1	100,000	<b>5</b>	<b>540,123</b>
<b>TOTALS:</b>	<b>11</b>	<b>\$349,266</b>	<b>14</b>	<b>\$538,936</b>	<b>16</b>	<b>\$495,211</b>	<b>18</b>	<b>\$570,878</b>	<b>20</b>	<b>\$527,059</b>	<b>79</b>	<b>\$2,481,350</b>

## 2007-2009 LCE COURSE-REDESIGN INITIATIVE PROJECTS

	Redesigned Courses	Total Project Funding	Enrollment <sup>1</sup>	Annual Projected Savings <sup>1, 2</sup>	Average Reduction in Cost Per Student <sup>1</sup>
ASU	ACC 230: Uses of Accounting Information I	\$25,143	Project funding discontinued after pilot semester <sup>3</sup>		
ASU	CHM 101: General Chemistry	\$100,000	4,540	\$254,240	<b>16%</b>
ASU	College Algebra	\$25,000	Project funding discontinued after pilot semester <sup>3</sup>		
ASU	CSE 180: Computer Literacy	\$51,763	2,196	\$48,312	<b>44%</b>
ASU	GLG 101 Introduction to Geology I, Physical	\$52,911	2,200	\$72,600	<b>36%</b>
ASU	MGT 300 Organizational Behavior and Leadership	\$49,665	360	\$78,840	<b>59%</b>
ASU	CMN 225: Public Speaking	\$41,178	600	\$120,000	<b>58%</b>
ASU	WST 100 Women and Society WST 300 Women in Contemporary Society	\$45,218	2,800	\$58,800	<b>27%</b>
NAU	BIO 181 Introductory Biology	\$24,719	Project funding discontinued after pilot semester <sup>3</sup>		
NAU	PSY 101 Introduction to Psychology	\$49,992	2,000	\$36,000	<b>30%</b>
UA	MCB 181: Introductory Biology	\$50,000	1,730	\$152,240	<b>33%</b>
UA	CHEM 103/104: Fundamentals of Chemistry	\$49,911	4,000	\$100,000	<b>13%</b>
UA	NATS 101 A Geological Perspective	\$50,331	1,200	\$302,400	<b>58%</b>
	<b>TOTALS:</b>	<b>\$615,831</b>	<b>21,626</b>	<b>\$1,223,432</b>	<b>37% (avg)</b>

<sup>1</sup>These figures represent actual program results as documented in final project reports based on Fall 2008 activity.

<sup>2</sup>Overall savings calculations are based on reductions in cost per student at original (pre-redesign) enrollment levels. However, cost-per-student reduction may also come through an increase in total enrollment capacity at no or minimal increase in overall instructional cost.

<sup>3</sup>Three projects were discontinued following pilot phase primarily for staffing and timing issues. "Total Project Funding" represents 50% of initial approved award.

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

## FINANCIAL INFORMATION

	FY 2002 ACTUAL	FY 2003 ACTUAL	FY 2004 ACTUAL	FY 2005 ACTUAL	FY 2006 ACTUAL	FY 2007 ACTUAL	FY 2008 ACTUAL	FY 09 REV. BUDGET	FY 2009 ACTUAL	FY 2010 BUDGET
<b>REVENUE</b>										
Carry Forward	-	\$ 297,864	\$ 307,772	\$ 293,560	\$ 18,965	\$531,621	\$ 418,027	\$300,000	\$300,000	\$244,780
TRIF Revenue <sup>1</sup>	969,239	560,008	16,500	500,000	101,428	300,000	428,222	500,000	387,750	25,220
<b>TOTAL REVENUE</b>	<b>\$ 969,239</b>	<b>\$ 57,872</b>	<b>\$ 824,272</b>	<b>\$ 93,560</b>	<b>\$ 820,393</b>	<b>\$831,621</b>	<b>\$ 846,249</b>	<b>\$800,000</b>	<b>\$687,750</b>	<b>\$270,000</b>
<b>EXPENDITURES</b>										
<b>OPERATING BUDGET</b>										
Personal Services	\$ 3,133	\$ 2,962	\$ 9,365	\$ 5,180	\$ 9,959	\$ 8,397	-	-	-	-
ERE	744	2,461	1,491	828	2,502	2,064	-	-	-	-
All Other Operating	2,469	5,254	2,121	1,575	831	60,307	137,544 <sup>2</sup>	154,574 <sup>2</sup>	139,718	120,000
<b>Subtotal Operating</b>	<b>\$ 6,326</b>	<b>\$ 0,677</b>	<b>\$ 2,977</b>	<b>\$ 7,583</b>	<b>\$ 13,292</b>	<b>\$ 40,768</b>	<b>\$ 137,544</b>	<b>\$154,574</b>	<b>\$139,718</b>	<b>\$120,000</b>
<b>GRANTS/PROJECTS:</b>										
FY 2002-06 LCE										
Grants	\$ 567,107	\$ 554,488	\$ 14,212	\$ 454,666	\$ 264,880	\$339,360	\$ (36,524)	-	-	-
FY 2007 LCE Grants	-	-	-	-	-	-	-	-	-	-
FY 2008 LCE Grants	-	-	-	-	-	-	345,426	345,426	269,930	-
FY 2009 LCE Grants	-	-	-	-	-	-	-	300,000	-	-
FY 2010 LCE Grants	-	-	-	-	-	-	-	-	-	150,000
<b>Subtotal</b>	<b>\$567,107</b>	<b>\$ 554,488</b>	<b>\$ 514,212</b>	<b>\$ 454,666</b>	<b>\$ 264,880</b>	<b>\$339,360</b>	<b>\$ 308,902</b>	<b>\$645,426</b>	<b>\$269,930</b>	<b>\$150,000</b>
<b>Grants/Projects</b>	<b>\$567,107</b>	<b>\$ 554,488</b>	<b>\$ 514,212</b>	<b>\$ 454,666</b>	<b>\$ 264,880</b>	<b>\$339,360</b>	<b>\$ 308,902</b>	<b>\$645,426</b>	<b>\$269,930</b>	<b>\$150,000</b>
<b>EXPENDITURES, GRAND TOTAL</b>	<b>\$ 573,433</b>	<b>\$ 575,165</b>	<b>\$ 527,189</b>	<b>\$ 462,249</b>	<b>\$ 278,172</b>	<b>\$410,128</b>	<b>\$ 446,446</b>	<b>\$800,000</b>	<b>\$409,648</b>	<b>\$270,000</b>

<sup>1</sup> Funding of the Arizona Board of Regents' Technology and Research Initiative Fund (TRIF) is provided by a six-tenths cent increase in the Arizona sales tax rate approved by the voters through Proposition 301 on the November 2000 general election ballot.

<sup>2</sup> Contract payouts for National Center for Academic Transformation (NCAT)

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resulting important information on both project design and project management informed the decision to build on the past program and bring the LCE grant program to a new, higher level of institutional engagement, a new level of impact, and a new level of accountability.

### LCE COURSE REDESIGN INITIATIVE

As a result of the study, in January 2007 the Board embarked on a two-year LCE initiative based on the successful course redesign model pioneered by the National Center for Academic Transformation (NCAT). The LCE Course Redesign Initiative (CRI), to be managed by NCAT consultants, focused on the redesign of large-enrollment, multi-section "gateway" or key undergraduate courses to:

- Demonstrably improve student learning outcomes
- Reduce per-student costs of instruction
- More effectively align existing institutional resources
- Develop internal capacity to redesign additional courses beyond the project funding period

The LCE CRI program, which ends Sept. 2009, is funded through the Regents Innovation Fund for the 2007-2011. Two years of funding (\$500,000 per year, FY 2007-08 and FY 2008-09), or a total of \$1,000,000, has been designated for these projects.

### 2007-09 LCE CRI Funded Projects

From February through July 2007, project teams consisting of faculty and administrators at each University were coached through a structured process involving intensive analysis and planning as the foundation for their final redesign proposals. In all, 13 projects were selected and guided through a pilot phase, and 10 projects continued through full implementation of their redesigned courses in Fall 2008. In June 2009, NCAT released its report on the results of the projects, addressing the questions:

- **Did student learning improve?**
  - 5 = Yes, scores improved measurably
  - 2 = Yes, scores showed no difference but course is more challenging
  - 2 = No, no difference
- **Did course completion rates improve?**
  - 5 = Yes
  - 3 = No difference, but course was more difficult or course completion rates were already high
  - 2 = No, no difference
- **Were instructional costs reduced?**
  - 10 = Yes
- **Will the redesign be sustained after the grant period is over?**
  - 8 = Yes
  - 2 = Questionable

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**Student Enrollment.** More than 14,000 students were enrolled in, and thus directly impacted by, the redesigned courses during the Fall 2008 semester. Total *annual* enrollment of the redesigned courses is estimated at more than 21,000. Many of the projects plan to further increase enrollment as part of the ongoing redesign, raising the number of students impacted even higher in coming semesters.

**Cost Reduction Results.** Across all 10 completed redesign projects, NCAT calculated total annual cost reductions at \$1,223,432—a reduction of 28%, compared with the costs of the traditional course formats. The *average* course-level cost reduction was 37%. Using the NCAT model, the redesigns saved an average of \$93 per student in instructional costs, ranging by course from \$18 to \$252 per student. Strategies for achieving these cost reductions include:

- Transferring portions of the class to on-line or distance-learning format
- Integrating technology into the teaching/learning experience and/or classroom management

- Reconfiguring the staffing
- Reconfiguring space to accommodate larger numbers of students
- Increasing student-enrollment capacity without additional resources

**Looking Ahead . . .**

NCAT's rigorous analysis of all project data provides the foundation for solid decision-making about the next steps for the Learner-Centered Education grant program. Faculty participating in this initial LCE CRI grant cycle are enthusiastic about providing leadership within their institutions to apply the NCAT redesign model to additional courses. Expanding the model to other courses is, in turn, likely to generate greater savings in instructional costs, beyond the initial \$1.2 million. The LCE Advisory Council, in consultation with LCE CRI faculty team members, is considering options for continuing, expanding, and/or revising the LCE grant program and will present recommendations to the Academic Affairs Committee, with the expectation of initiating a new round of LCE program funding by the end of 2009.

PERFORMANCE MEASURES / DELIVERABLES	2002	2003	2004	2005	2006	2007 –2009
Number of courses modified to LCE focus	95	123	104	68	72	10
Faculty addressing curriculum through LCE grants	188	147	111	141	133	65
Students affected by LCE grant projects	14,000	5,362	6,392	8,491	10,500	20,000-25,000 annually

**Oversight of the LCE Program**

**ABOR Academic Affairs Committee (AAC)** provides oversight for the LCE program, approves funding for grants and approves substantive changes to grant process/criteria.

**2009-2010 members:** Regents Dennis DeConcini (chair), LuAnn Leonard, Bob McLendon, Ernest Calderon (ex-officio) and Ross Meyer (ex-officio); the three university provosts: Betty Capaldi, ASU; Liz Grobsmith, NAU; and Meredith Hay, UA; and ex-officio members Joel Sideman, ABOR; William Culbertson, faculty; and Nicole Pasteur, NAU.

**The LCE Advisory Council** provides operational support and recommends projects for funding to the AAC.

**2009-2010 members:** *Provost Appointees:* Arthur Blakemore, ASU; Don Carter, NAU; and Gail Burd, UA. *Arizona Faculties Council:* William Verdini, ASU; Charles Connell, NAU; and JC Mutchler, UA.

**For More Information:**

- Visit the LCE link on the home page of the Arizona Board of Regents website, at [www.azregents.edu](http://www.azregents.edu).
- Contact Maryn Boess, Grants Program Manager, Arizona Board of Regents, 2020 N. Central Ave., Suite 230, Phoenix, AZ 85004, (602) 229-2560 , [maryn.boess@azregents.edu](mailto:maryn.boess@azregents.edu)