



Arizona Board of Regents  
2020 North Central Avenue, Suite 230  
Phoenix, AZ 85004-4593  
602-229-2500  
Fax 602-229-2555  
[www.azregents.edu](http://www.azregents.edu)

Arizona State University

Northern Arizona University

University of Arizona

## Learner-Centered Education Course Redesign Initiative (LCE CRI):

### CALL TO PARTICIPATE

The Arizona Board of Regents (ABOR) invites Arizona's state universities to participate in a new initiative to redesign large-enrollment, multi-section courses using technology-supported active learning strategies. The goal is to achieve improvements in learning outcomes as well as reductions in instructional costs.

In 2001, the Regents authorized funding for a Learner-Centered Education grant program, providing monies from the Proposition 301 TRIF Regents Innovation Fund for grants to faculty to improve and expand learner-centered education throughout the university system. The LCE Course Redesign Initiative takes the Regents' interest in learner-centered education to a new level and incorporates the LCE grant funding for 2007-2009. During its first round, the LCE CRI expects to award up to 15 grants of up to \$100,000 each to university-initiated redesign projects.

The goals of the new initiative are to simultaneously:

- Adopt new ways to improve student learning outcomes
- Demonstrate these improvements through rigorous assessment
- Increase consistency across multiple-section courses
- Free up instructional resources to be used for other purposes
- Develop the internal capacity of state university faculty and staff to continue the redesign process

### ORIENTATION WORKSHOPS\*

[Orientation workshops](#) will be held on each campus to introduce all interested members of the university community to the LCE Course Redesign Initiative and the reasons they might choose to participate.

Northern Arizona University	February 20, 2007	1:00 pm – 5:00 pm
University of Arizona	February 20, 2007	1:00 pm – 5:00 pm
Arizona State University	February 21, 2007	1:00 pm – 5:00 pm

**\*Attendance at an orientation workshop is required in order to be eligible to submit a project proposal.** The workshops are also open to all interested faculty and administrators.

These orientation workshops will feature staff from the National Center for Academic Transformation (NCAT), architect of the successful large-scale national course redesign programs on which the LCE Course Redesign Initiative is based.

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*Board Members:* **President Robert B. Bulla**, Scottsdale **Fred T. Boice**, Tucson **Ernest Calderón**, Phoenix  
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### BACKGROUND: THE RATIONALE FOR COURSE REDESIGN

Public higher education in Arizona, as throughout the nation, continues to be challenged by the need to increase access, to improve the quality of student learning, and to control or reduce rising costs. These issues are, of course, inter-related. As tuition costs continue to rise, access may be curtailed for those least able to afford education. Promises to increase access ring hollow when high percentages of students fail to graduate. The solutions to these challenges appear to be inter-related as well. Historically, improving quality or increasing access has meant increasing costs, while reducing costs has generally meant reducing both quality and/or access. To sustain its vitality while serving a growing and increasingly diverse student body, higher education must find a way to resolve these familiar trade-offs among quality, cost and access.

Many colleges and universities, including Arizona's three state universities, have adopted exciting new ways of infusing technology to enhance the teaching and learning process and to extend access to new populations of students. In 2001, the Arizona Board of Regents authorized \$500,000 annually for Learner-Centered Education (LCE) grants to faculty to improve and expand learner-centered education throughout the university system. The goal of the program was to change the dynamics of student-faculty interaction to optimize student 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. Initially funded for five years (2002-2006), the grant program supported many excellent projects.

Through the LCE Course Redesign Initiative, the Board of Regents seeks to build on this experience and harness the potential of technology to improve the quality of student learning, increase retention and reduce the costs of instruction in courses that have a broad impact on large numbers of students, especially in those areas that the Arizona state universities view as most important.

### A NEW APPROACH

Since April 1999, the National Center for Academic Transformation (NCAT) has managed a number of programs in course redesign that demonstrate how colleges and universities can redesign their instructional approaches using technology to achieve quality enhancements as well as cost savings. In the seminal Program in Course Redesign, 30 institutions were selected from hundreds of applicants in a national competition to participate. Each institution redesigned one large enrollment course to increase quality while simultaneously reducing instructional costs through the use of technology. These 30 institutions represent research universities, comprehensive universities, private colleges, and community colleges in all regions of the United States.

The first redesign projects focused on large enrollment, introductory courses. As an initial target, these courses have the potential of generating large cost savings and having significant impact on student success. Studies have shown that undergraduate enrollments in the United States are highly concentrated in introductory courses. On average, nationally, at the baccalaureate level, the 25 largest courses generate about 35 percent of student enrollment. At the community college level, the 25 largest courses generate about 50 percent of enrollment. In addition, successful completion of these courses is

key to student progress toward a degree. High failure rates in these courses—typically 15% at research universities, 30-40% at comprehensives, and 50-60% at community colleges—can lead to significant drop-out rates between the first and second years of enrollment.

NCAT required each of the 30 institutions participating in the PCR to conduct a rigorous evaluation focused on learning outcomes as measured by student performance and achievement. National assessment experts provided consultation and oversight regarding the assessment of learning outcomes to maximize validity and reliability.

The findings of the Program in Course Redesign show:

- 25 of the 30 redesigns improved learning; the remaining 5 redesigns showed learning outcomes equivalent to traditional formats;
- Of the 24 projects that measured retention, 18 resulted in reductions in drop-failure-withdrawal (DFW) rates; and,
- All 30 projects reduced the cost of instruction – by 37% on average, with a range of 15% to 77%.

Other outcomes achieved included improved student attitudes toward the subject matter and increased student satisfaction with the mode of instruction.

While each of the 30 institutions within the PCR had complete freedom as to how they would redesign their course to increase quality and reduce costs, a number of common elements emerged:

1. **Whole course redesign.** In each case, the whole course—rather than a single class or section—is redesigned. Faculty members begin by analyzing the time that each person involved in the course spends on each kind of activity. This analysis often reveals duplication of effort. By sharing responsibility for both course development and course delivery, faculty members save substantial time and achieve greater course consistency.
2. **Active learning.** All of the redesign projects make the teaching-learning enterprise significantly more active and learner-centered. Lectures are replaced with a variety of learning resources that move students from a passive, note-taking role to active learning. As one math professor put it, “Students learn math by doing math, not by listening to someone talk about doing math.”
3. **Computer-based learning resources.** Instructional software and other Web-based learning resources assume an important role in engaging students with course content. Resources include tutorials, exercises and low-stakes quizzes that provide frequent practice, feedback, and reinforcement of course concepts.
4. **Mastery learning.** The redesign projects offer students more flexibility, but the redesigned courses are not self-paced. Student pace and progress are organized by the need to master specific learning objectives—often in a modular format, according to scheduled milestones for completion—rather than by class meeting times.
5. **On-demand help.** An expanded support system enables students to receive assistance from a variety of people. Helping students feel that they are a part of a learning community is critical to persistence, learning and satisfaction. Many projects replace lecture time with individual and small-group activities that take meet in computer labs—staffed by faculty, graduate teaching assistants and/or peer tutors—or online, thus providing students more one-on-one assistance.
6. **Alternative staffing.** Various instructional personnel—in addition to highly trained, expert faculty—constitute the student’s support system. Not all tasks associated with a course require a faculty member’s time. By replacing expensive labor (faculty and graduate students) with relatively inexpensive labor (undergraduate peer mentors and course assistants) where appropriate, the projects increase the number of hours during which students can access help and free faculty to concentrate on academic rather than logistical tasks.

From the initial 30 projects, NCAT has identified five different models for applying these elements. The five models represent different points on the continuum from a fully face-to-face course to a fully online course. NCAT has also established a number of proven approaches to assessing student learning as well as a variety of strategies to overcome potential implementation obstacles.

### **What does "cost savings" mean in practice?**

It is important to understand the context for reducing costs. In the past cost reduction in higher education has meant loss of jobs, but that's not the NCAT approach. In all 30 Program in Course Redesign projects, the cost savings achieved through the redesigned courses remained in the department that generated them, and the savings achieved were used for instructional purposes. NCAT thinks of cost savings as a reallocation of resources that allows faculty and their institutions to achieve their "wish lists"—what they would like to do if they had additional resources.

Institutional participants have used cost savings in the following ways:

- offering additional or new courses that previously could not be offered;
- satisfying unmet student demand by serving more students on the same resource base;
- breaking up "academic bottlenecks"—courses that delay forward progress of students within a subject area or program because they are oversubscribed
- increasing faculty release time for research, renewal or additional course development; and,
- combinations of these.

Further information about NCAT, the Program in Course Redesign results, and other NCAT course redesign programs are available at [www.theNCAT.org](http://www.theNCAT.org).

## **THE LCE COURSE REDESIGN INITIATIVE**

The Arizona Board of Regents, in partnership with NCAT, will build on the successful models and lessons learned from the national Program in Course Redesign to create a course redesign program within the Arizona state university system for multi-section, large-enrollment courses. The LCE Course Redesign Initiative will engage with NCAT to support a systemwide course redesign project, which will enable us to develop internal capacity to support this process on an ongoing basis throughout the system. For the 2007-2009 project period, the Board of Regents expects to award up to 15 grants of up to \$100,000 each to university-initiated redesign projects.

### ***Program Focus: Large-Enrollment Classes***

In order to have maximum impact on student learning and achieve the highest possible return on the investment of time and financial resources, redesign efforts supported by this program will focus specifically on undergraduate courses with high enrollments. In addition to having an impact on large numbers of students, there are other advantages of such a focus. In many large-enrollment courses, the predominant instructional model is the large lecture. While recognizing the limitations of the lecture method, many departments continue to organize courses in this way because they believe that it represents the most cost-effective way to deal with large numbers of students. The program will demonstrate that alternatives that improve quality and are less costly than lecture-based strategies are possible.

In addition, many large-enrollment courses are introductory. These introductory courses are good prospects for technology-enhanced redesign because they have a more or less standardized curriculum and outcomes that can be more easily delineated. They also serve as foundation studies for future majors. Successful learning experiences in them will influence students to persist in key disciplines like the sciences. Finally, because those courses are feeders to other disciplines, success in them will help students make the transition to more advanced study.

## **General Guidelines**

Detailed planning guidelines and selection criteria will be shared at the orientation sessions and included with the project application materials. Following are some of the key elements of the initiative:

- The focus will be on large-enrollment courses, which are defined as courses with very large sections (e.g., traditional lecture courses) or courses that offer large numbers of smaller sections. In all cases, more than one person should be involved in teaching the course.
- Courses selected to be redesigned should face an academic problem (e.g., low successful completion rates), a resource problem (e.g., an inability to meet demand based on current resources), or a combination of both.
- Courses to be redesigned must be at the undergraduate level.
- Participants must be fully committed to completely redesigning and delivering a large-enrollment course currently offered at an Arizona state university.
- Applicant teams may be from a single campus or from multiple campuses that offer the same course.
- Grant awards will be made by the Arizona Board of Regents in consultation with the LCE Advisory Council and with NCAT staff.

### **To Learn More About This Program:**

To learn more about this program, plan to participate in an initial orientation session in which NCAT staff will provide an overview of the successful planning methodology used in the PCR and the results it achieved.

**Representation at the [orientation workshop](#) is required in order for an academic unit to be eligible to submit a project proposal.** The goal of this workshop is for prospective participants to acquire a solid understanding of what is needed to implement a good redesign. Through presentations, case studies, and group work, participants will learn the basic planning steps as well as how to adapt NCAT's redesign methodology to the needs of their particular institution.

## **FOR MORE INFORMATION**

For more information about the LCE Course Redesign Initiative, the orientation workshops, or NCAT, please contact:

- Maryn Boess, Arizona Board of Regents Grant Programs Manager, (602) 229-2560, [maryn.boess@azregents.edu](mailto:maryn.boess@azregents.edu)
- Carolyn Jarmon, NCAT Senior Associate, (518) 695-5320, [cjarmon@theNCAT.org](mailto:cjarmon@theNCAT.org)