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PRESIDENT’S MESSAGE

It is a pleasure to present the “Bridging to the Future” Self-Study Report, the first step toward the North Central Association’s 2010 re-accreditation of our University of Arizona.

The UA voluntarily is seeking re-accreditation through the Higher Learning Commission, a commission of the North Central Association of Colleges and Schools. The NCA, founded in 1895, is one of six regional accreditation organizations recognized by the U.S. Department of Education. Our university has been continuously accredited since 1917.

Accreditation validates the extraordinary quality and integrity of our academics, research, administration, faculty, staff, resources, facilities and procedures. The credibility and accountability of accreditation resonates with students, graduates, donors, faculty and employers. Accreditation ensures the value and durability of a degree from our university.

In addition to quality assurance, institutional and program improvement is a basic purpose of accreditation. In this spirit, we did not view the self-study as a matter of compliance or a staid process of measurement and metrics; we seized this opportunity to take a reasoned, in-depth look at our university and to articulate a vision.

Our university’s re-accreditation process, which began in August 2008, is led by co-chairs Beth Mitchneck, Associate Dean of the Colleges of Letters, Arts, and Science and Professor of Geography and Regional Development, and Randy Richardson, Professor of Geosciences. Working teams of faculty, staff, students, administrators and community members contributed to the self-study report, which reflects input from 70 department heads, numerous deans and vice presidents, community leaders, several hundred faculty members, and at least 1,000 students who participated in a case study and in focus groups.

The report, which emerged from thousands of hours of study and analysis, reflects an inclusive institution that needs to celebrate its amazing accomplishments and to be prepared to meet the challenges of the future.

The report describes the UA’s strengths, such as engaging undergraduate and graduate education, stable enrollment growth and increasing research funding, recognizing these as areas upon which we need to build. An overarching concept of integration percolates from the analysis. It is encouraging to see that productive, university-wide interconnections are prevalent.

In addition to a descriptive discussion of our university, this future-focused document recognizes challenges that our university must face and offers prescriptive comments on areas that need improvement.

Those who devoted their time and energy in shaping this report deserve our gratitude and appreciation for identifying accomplishments to celebrate and challenges we must meet. They have enriched our university.

The “Bridging to the Future” Self-Study Report will help shape the vision for a robust, nimble institution amid rapid change and technological advancements while expanding the UA’s core mission of access, quality and discovery.

Robert N. Shelton, Ph.D., President
The University of Arizona
Executive Summary

The University of Arizona has made extraordinary advances over the past decade. It has extended its educational excellence to an ever-widening pool of undergraduate and graduate students while maintaining its outstanding reputation for cutting-edge research and increasing its engagement with, and service to, constituents across the state, throughout the country and around the world.

Since its last accreditation by the North Central Association’s Higher Learning Commission in 2000, the UA has given the world reason to ponder the possibility of life on Mars; it has expanded its nationally recognized colleges of Medicine, Pharmacy and Public Health into the state capitol of Phoenix; and it has continued to rank among the very best universities in the country for studies in the humanities, arts and letters.

The UA, one of 63 members of the prestigious American Association of Universities, was recently ranked 17th among all public universities by the highly respected Center for Measuring University Performance.

The university has accomplished all this while facing undoubtedly the most serious financial challenges in its history. It has responded to those challenges with vision and vigor, setting in motion plans for continuing to thrive on reduced state funding, with goals that are both ambitious and realistic.

The university embraces President Robert N. Shelton’s vision of “Building a better Arizona through access, quality, and discovery”—a vision readers will recognize throughout this self study. (President Shelton’s complete mission statement is at http://www.president.arizona.edu/about).

The University of Arizona, which is celebrating its 125th year in 2010, has been continuously accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools since 1917, most recently in 2000.

This document demonstrates how the UA satisfies the Higher Learning Commission’s five accreditation criteria while acknowledging the challenges ahead. The report also identifies changes the university is making to better serve its students and other constituents.

Criterion One: Mission and Integrity

The Organization operates with integrity to ensure the fulfillment of its mission through structures and processes that involve the board, administration, faculty, staff, and students.

As a land-grant university, the University of Arizona has an unwavering commitment to serving the people and economy of Arizona. One of the primary areas of emphasis over the past 10 years has been to increase university access to students of all economic and ethnic backgrounds.

The Arizona Assurance Scholars program, started in 2008, is designed to improve access and success for in-state students from low-income backgrounds. It is based on the premise that all Arizona students should be able to pursue the best educational opportunities the state has to offer. Arizona Assurance offers its scholars financial assistance and more, including mentoring, classes designed to improve their chance for academic success, and career guidance and preparation. In the first year alone, the UA improved the retention rates of 590 students from families who earn up to $42,400 a year compared with students from similar backgrounds the previous year.
The Arizona Telemedicine program extends access to top-quality medical services throughout the state, with an emphasis on medically underserved rural communities, Indian reservations and prisons. In 2009, the program received a $1.13 million federal grant to create the Southwest Regional Telehealth Resource Center to support the development of electronic health records and to expand telemedicine services.

Addressing the diversity of students, faculty and staff has been a focal point for the past decade, and measurable progress has been made in increasing the success of minority students. The UA is a national leader in graduate education for Native American and Hispanic students, as well as students of varying abilities. At the same time, the UA recognizes the need to improve the success rates of Native American students.

In 2006, the university received a National Science Foundation ADVANCE Award for Institutional Transformation, which is leading to increased faculty diversity and equitable advancement opportunities for women.

Over the last 10 years, the UA has implemented a number of proactive approaches to improving institutional integrity. The focus has been on education and awareness of responsible conduct in all aspects of university life, from the classroom to the research lab, and on a renewed commitment to respectful behavior in the workplace.

In bridging to the future, the UA is placing particular focus on improving its numbers of successful students, faculty and staff of diverse backgrounds, and on extending shared governance and communication across the university.

**Criterion Two: Preparing for the Future**

The organization’s allocation of resources and its processes for evaluation and planning demonstrate its capacity to fulfill its mission, improve the quality of its education, and respond to future challenges and opportunities.

The University of Arizona’s 2011-2015 Strategic Plan is based on four overarching goals: expanding access and enhancing educational excellence; increasing achievements in research, scholarship and creative expression; expanding community engagement and workforce impact; and improving productivity and increasing efficiencies.

The UA faces unprecedented challenges that will test its ability to manage demographic, economic and environmental pressures while continuing to fulfill its mission. The university’s responses to these challenges include: increasing tuition and fees and implementing other strategic measures to offset cuts in state funding; broadening communication about the UA’s goals and achievements; transitioning to responsibility-centered management; expanding distributed learning opportunities; and developing new strategies to increase faculty retention.

To improve its institutional effectiveness, the UA is upgrading and enhancing two major information technology support systems. The MOSAIC project is upgrading computer systems campus-wide, and Business Intelligence is an improved system for accessing data on students, finances, research and personnel.

The UA recently improved its planning and budgeting processes to address key areas of the university’s mission in a proactive manner. Bridging to the future requires a new approach to campus-wide planning and budgeting, with closer alignment of those processes across the university.
Criterion Three: Student Learning and Effective Teaching

The organization provides evidence of student learning and teaching effectiveness that demonstrates it is fulfilling its educational mission.

The UA’s commitment to access, quality and discovery is clearly exemplified by the experiences of its students in the classroom and beyond. Access has increased for Arizona residents, even with tuition increases. The quality of the educational experience has improved, along with a focus on undergraduate research experiences. Services that recruit and prepare students for study at the UA have increased. Student learning and effective teaching at the UA is the essential focus of the campus community. The student educational experience in the past 10 years has involved a conscious integration of classroom and beyond-the-classroom experiences.

As a result of the UA’s focus on the student experience, undergraduates are now retained at slightly higher rates and graduate more quickly than in the past. UA persistence rates for minority students as a group are nearly identical to those of the total undergraduate population, although there are variations between different populations of minority students. In addition, minority graduation rates, while still lagging behind the overall graduation rates, have seen significant increases. UA assessment of student learning outcomes and programs is very strong for degree programs and units with professional accreditation, and significant strides have been made for the rest of the university in the last five years.

Graduate education has achieved improvement of time-to-degree in many departments, a strong focus on interdisciplinarity and translational research, and improved and proactive processes for addressing graduate student concerns.

Bridging to the future requires continued focus on improving retention and graduation rates of all students, while providing greater access to classes and assessing student outcomes effectively. The growth in student numbers will be partly addressed through new means of enrollment management, including a new focus on distributed learning.

Criterion Four: Creativity and Knowledge Discovery

The organization promotes a life of learning for its faculty, administration, staff, and students by fostering and supporting inquiry, creativity, practice, and social responsibility in ways consistent with its mission.

The UA is one of the nation’s leading research universities, known for its strong support of interdisciplinarity and shared scholarship. Many of the UA’s efforts in the areas of research, creativity and knowledge discovery cross college boundaries, helped by a support system that facilitates interdisciplinary and collaborative approaches to research and education. These qualities are critical to the university’s ability to help solve significant issues facing our society.

The UA is proud to be a student-centered research university, with students and faculty routinely working together on such lofty pursuits as new ways to diagnose and prevent disease, to sustain natural resources, to assess the impact of stereotyping on self-esteem and success, to search for conditions that might support life beyond our own planet, and to reason critically and objectively about moral and human values. The university’s national and international prominence in research is due partly to the collaborative investigations by students and faculty working together.

In the last 10 years, the UA has ranked as high as 14th among the nation’s public universities in National Science Foundation research expenditures. In the most recent NSF rankings, the UA is first in the nation in funding for research in the physical sciences.
The UA excels in providing students and the greater community with a wide range of resources and programs aimed at acquiring knowledge and promoting discovery. The university has great depth in interdisciplinary course work and quality research, as well as outreach centers that cover areas as diverse as water resources and second-language acquisition. The UA demonstrates this through programs on- and off-campus, including extensive study-abroad opportunities. UA programs engage undergraduates, graduate students, and the general public.

As it bridges to the future, the UA is focusing on expanding interdisciplinary opportunities for students, creating more resources for research opportunities, and expanding translational research, broadly defined.

**Criterion Five: Engagement and Service**

As called for by its mission, the organization identifies its constituencies and serves them in ways both value.

The University of Arizona has a strong record of engagement and service to the people of Arizona, the nation as a whole and areas around the world. The UA views engagement as active, reciprocal, and sustainable partnerships with constituencies within and beyond the campus community, rather than the more conventional understanding of outreach and service that casts the institution of higher learning in the dominant role. The UA’s emphasis on translational research and an emerging emphasis on service learning improve the impact of its engagement and service.

Many long-lasting relationships testify to the strength of past engagement efforts. The College of Agriculture and Life Sciences has a strong record of effective and enduring engagement that includes and goes beyond its Cooperative Extension program. The Colleges of Education and Public Health, among others, have also been actively developing new opportunities for engagement locally and abroad. The Arizona Outreach College was created, in particular, to facilitate the development of new and innovative ways of engaging our public.

In order to bridge to a future of continued successful engagement with its constituencies, the UA needs to increase its communication and promotion of engagement activities on campus and beyond; create a President’s Advisory Council for Engagement and Outreach; develop policies to reward the engagement efforts of faculty, students and other members of the university community; and make engagement as essential to the student experience as teaching and research.

**Conclusion**

The last 10 years have witnessed many improvements in UA engagement. A series of administrative reorganizations have led to stronger support for the university’s interactions with its constituencies.

As it bridges to the future, the UA continues to respond to reductions in state funding while striving for improvement in four critical areas:

- **Alignment of planning and budgeting** across all levels of the university
- **Expanded evaluation and assessment** through improved data collection
- **Continued engagement and service** in Arizona and beyond
- **Increased diversity** of students, faculty and staff

Each of these four areas has seen tremendous improvement over the past 10 years. Additional work is required to bridge to a future in which all students thrive, graduate and become productive members of our society. The University of Arizona embraces these challenges and welcomes the opportunity to continue its commitment to quality, access and discovery in the coming decade.
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NCA 2010

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Chapter 1: Introduction
CHAPTER 1 • INTRODUCTION

UNIVERSITY HISTORY

It was a bold move in 1885 to start a university in the middle of the desert before Arizona was even a state. There were no high schools yet in Arizona and the elementary schools were few and scattered. Arizona’s population was 40,000.

The University of Arizona’s launch could be considered either good luck or bad timing. Tucson had sent a delegation to the Arizona Legislature with instructions to get the state capitol moved to Tucson. But the weather was bad, the trip to Prescott by stagecoach was long and the Tucson delegation arrived late to the session. At the time, it seemed like a costly delay. Phoenix got the insane asylum with an unheard-of budget of $100,000; Prescott kept the capital; Tempe was given a normal school with a budget of $5,000; and Tucson’s prize was the University of Arizona, with a budget of $25,000, which was later used to build Old Main.

A provision of the Legislature was that Tucson had to furnish the land within one year or the appropriation would lapse. It was a close call. Jacob Mansfeld, a friend of education and a Tucson merchant, identified 40 acres of mesquite-covered land and tried to get the owners to give it to the Arizona Board of Regents. The owners were two well-known gamblers, E.B. Gifford and Ben C. Parker, and a saloonkeeper, W.S. “Billy” Read. As the deadline loomed, they agreed. So the origins of the University of Arizona can be credited to four forward-thinking individuals—all of whom took a gamble that something great would one day grow on those 40 acres.

INSTITUTIONAL CONTEXT

Higher Education Governance in Arizona

The Arizona constitution sanctions the Arizona Board of Regents (ABOR), the governing body of Arizona’s public-university system, which consists of Arizona State University (ASU), Northern Arizona University (NAU), and the University of Arizona (UA) (Article 11, Section 5). Statutes that endow the board’s legal authority include Arizona Revised Statutes (A.R.S.) 15-1625 and A.R.S. 15-1626.A.

A.R.S. 15-1625 gives ABOR jurisdiction and control over the university with the power to purchase, hold, lease and sell real estate on behalf of the university. A.R.S. 15-1626.A empowers ABOR to “enact ordinances” to govern the University of Arizona, “establish curriculum and designate courses” that “will best serve the interests of the state,” award degrees and diplomas and adopt personnel rules. Additional information about the board and its policies is available on the Arizona Board of Regents website.¹

The governor appoints ABOR members subject to state Senate confirmation. Each regent serves an eight-year term, with the exception of the student regent, who serves a one-year term as a non-voting member and an additional one-year term as a voting member. ABOR members elect officers to annual terms beginning each July 1. The governor and the state superintendent of public instruction serve as ex-officio members of the board. Board members represent a variety of professions and backgrounds, and none can be employed by a state university during his or her term. All regents are public members.

A.R.S. 15-1626-A.2 requires the ABOR to appoint and employ the president and the other employees of the UA. The university’s chief administrative officer is Robert N. Shelton, who became the 19th president of the university in July 2006.

ABOR also authorizes the UA’s affiliation with the Higher Learning Commission of the North Central Association of Colleges and Schools (ABOR Policy 2-402).

The state’s Joint Legislative Budget Committee (JLBC) and the governor’s Office of Strategic Planning and Budgeting (OSPB) play significant roles in university appropriations and planning.
The JLBC makes recommendations to the Legislature regarding all facets of the state’s budget, revenues and expenditures, future fiscal needs, and government organization and functions. The OSPB performs similar functions for the executive branch. It serves as a central resource for the compilation and analysis of state fiscal matters, advises the governor in budget preparation, and advocates for the governor’s proposed budget during legislative deliberations.

The University of Arizona—Main Campus

The University of Arizona is a public, land-grant university committed to providing university access to the people of Arizona through top-quality undergraduate, graduate, and professional instruction; through promoting the discovery, application, and dissemination of new knowledge; and through extending the benefits of the university by engaging with Arizona’s citizens and communities.

For the first 23 years of the university’s history, the number of students attending its preparatory school outnumbered students enrolled at the university. The UA today has almost 39,000 students, and nearly 14,700 employees. The UA main campus has grown from its original 40 acres to more than 350 acres, and boasts the oldest continually maintained green space in Arizona.

The UA is the largest public employer in Southern Arizona. The university’s economic impact on Arizona in fiscal 2003-2004—felt directly, through university employment and wages, and indirectly, through jobs, wages, and sales resulting from UA activities, employees, students, and visitors—was nearly 41,300 jobs and over $2.3 billion in wages and sales according to a 2005 study.

The University of Arizona offers a broad range of educational programs and support services that attract an excellent and diverse student body. The UA is one of 63 members of the prestigious Association of American Universities, and conducts significant scholarly and creative research, integrating its discoveries into educational experience and enhancing the quality of life in Arizona.

The UA College of Medicine is the state’s only public medical school, and is one of many programs that have earned the UA designation as a “research university, very high activity” by the Carnegie Classification of Institutions of Higher Education. In addition, the National Science Foundation ranks the UA as one of the nation’s top 20 public universities in research expenditures.

The university is comprised of 13 colleges, one branch campus in Sierra Vista, and the expansion over the last few years of its colleges of Medicine, Pharmacy and Public Health to downtown Phoenix. The UA also has two supporting colleges—Honors and Outreach—and 76 research centers. More than 345 undergraduate, graduate and professional degree programs are offered on a semester schedule. Educational programs designed to meet the demand for virtual, hybrid, and distance offerings, are added, coordinated, and managed through the Outreach College. More than 225,000 alumni reside in all 50 states and 150 foreign countries. The 2020 Scorecard provides additional data and comparisons about the university.

Affiliated Organizations

The UA partners with several organizations that are distinct from, but closely aligned with, the university and help the UA advance its mission and goals.

University Medical Center

University Medical Center is the primary teaching hospital for the colleges of Medicine, Nursing, and Pharmacy. Among the hospital’s numerous

Wilbur Wildcat and President Shelton lead the Homecoming celebration [Photo by Scott Kirkessner]
distinctions, UMC operates Southern Arizona’s only Level 1 trauma center. Becker’s Hospital Review magazine named UMC one of the 10 best hospitals in America for 2009.

University Physicians Healthcare
University Physicians Healthcare is a not-for-profit corporation created by the UA in 1985 as the medical practice for physicians at the UA College of Medicine. Arizona’s largest physician practice, UPH employs more than 350 physicians who also comprise the medical staff of UMC. In addition to teaching and patient care, UPH physicians conduct research and train physicians and other health-care professionals.

University Physicians Hospital at Kino Campus
Formerly Kino Community Hospital, UPH Hospital is owned by Pima County, which entered into a long-term management agreement with UPH in June 2004. UPH Hospital combines outpatient clinics with a comprehensive inpatient facility, and is Southern Arizona’s newest academic medical facility. Its medical staff consists of physicians who are full-time faculty with the UA College of Medicine.

UA Healthcare Incorporated
In June 2010, the Arizona Board of Regents approved an integration of UMC and UPH into a new corporation named UA Healthcare Inc. The integration serves to enhance the existing partnership among UPH, UMC and the UA, and supports their mutual goals. It also creates a two-hospital system of UMC and the county-owned UPH Hospital at Kino Campus that will expand patient care and training of new physicians and other healthcare professionals, while continuing to advance clinical science to diagnose and treat human disease.

The creation of UA Healthcare Inc. offers many benefits, including coordination and integration of patient care, a stronger unified community presence and a much closer alignment with the College of Medicine. The integration also encourages joint strategic planning, funding and implementation of key initiatives, as well as coordinated branding, marketing and philanthropic efforts.

UA Cooperative Extension
Cooperative Extension plays a unique role in both rural and urban Arizona. The program provides practical information and education to...
help people improve their lives and livelihoods. Education programs promote environmental stewardship, family health and well-being, youth development and agriculture. Outreach efforts translate UA research, particularly research of the College of Agriculture and Life Sciences, into effective practices people can put to immediate use in their homes and businesses.

University Research Parks
The university is a known leader in optical science, medicine, biosciences, engineering and other high-tech fields that have led to the development of three UA research parks. The university’s Science and Technology Park in southeast Tucson is now in its 16th year and contributes $2.5 billion annually to the Pima County economy. The Arizona Center for Innovation, founded in 2003, is a technology business incubator located at the Science and Technology Park. In December 2009, the UA broke ground on the Arizona Bioscience Park, or BioPark, a 54-acre complex that will include laboratory and office space, a science and technical high school of the Tucson Unified School District, a hotel and conference center and university housing.

UA Alumni Association
More than 225,000 former UA students live throughout the 50 states and in more than 150 countries. Alumni participate in activities sponsored by the University of Arizona Alumni Association such as alumni clubs, college councils, and special interest groups in the United States and abroad.

UA Parents and Family Association
The UA Parents and Family Association facilitates communication among UA students, their parents and family members, and the UA administration. It also supports parent and family participation in campus life, and encourages philanthropic support through its Parents and Family Campaign. During the 2009-2010 school year, the Association funded 14 grant projects for a total amount of nearly $103,000. The UA Parents and Family Association is one of the true strengths of the university.

UA Foundation
The UA Foundation provides assistance to the university in three areas: fund-raising, asset management, and facilitation. The Foundation has raised more than $100 million annually over the past six years; has an asset base of nearly $500 million; and has helped generate a cumulative total of more than $2 billion in private funding for the UA since 1978. Beyond capital projects, other fund-raising priorities include 65 endowed faculty positions and more than 1,100 endowed student scholarships.

The eight-year Campaign Arizona, completed in 2005, raised nearly $1.2 billion, or $200 million beyond its $1 billion goal. The UA joins Harvard, the University of Southern California, Stanford University, the University of California at Los Angeles and the University of Virginia, all of which have surpassed $1 billion campaign goals.

Arizona’s Economy
Arizona’s current economic situation significantly affects the University of Arizona, Arizona’s University System, and primary and secondary education. The state economy plays an integral part in the university’s planning for the future.

Arizona is in the midst of the worst economy and state budget conditions of recent times. The January 2009 general fund tax collections were 36 percent lower than in January 2007. The state’s baseline deficit forecast of $3.6 billion for Fiscal Year 2010 represented more than a third of the state’s base general fund budget. Arizona has one of the largest state budget deficits in the country.

A review of state general fund revenues and expenditures over the past two decades suggests that Arizona’s deficit is the result of both the deep recession and the cumulative effect of legislative actions that both increased spending and cut taxes beyond a sustainable level. Legislative analysts and university economists agree that Arizona’s economic recovery will be slow, with revenues below pre-recession levels until Fiscal Year 2015. Meanwhile, the state’s population continues to grow, putting pressure on education, health care and other state programs.

Many in Arizona spent the decade of the 1990’s tirelessly working to gain adequate State funding for higher education. The fiscal situation was exacerbated by the passage of legislative mandates to improve employee benefits that often have not been funded. In 2001, legislators agreed to fund long-delayed wage increases starting in 2002. The events of 9-11 derailed that plan, and the current crisis has compounded the universities’ financial challenges. The 2005 report A Redesigned Public University System noted:
“Arizona already lags well behind national averages in state aid and in the combined aid provided from all sources. It is both imprudent and organizationally unsound to expect that the institutions will be able to provide sufficient aid in the future to meet the needs of the state’s population. Every dollar an institution devotes to financial aid is a dollar that cannot be spent on its primary focus to provide strong instruction and, if within the mission, research. Thus, funding financial aid within an institution creates natural tension. State need-based aid, on the other hand, fits comfortably with the state’s overall responsibility to keep college affordable and provides much greater transparency of the availability of aid.”

Despite that well-reasoned argument, the state still expects the universities to fund financial aid.

Arizona Board of Regents’ Initiatives

Arizona’s rapid population growth and deteriorating economic situation fostered ABOR efforts to assure that the Arizona University System could support projected significant increases in students through 2020. What follows is a summary of those initiatives.

Changing Directions: In 2002 ABOR initiated a comprehensive review of university revenue sources and management strategies to provide the universities with the resources needed to achieve the goals of providing high-quality education, research, and service to the State of Arizona. A significant element of the Changing Directions initiative was to revise the board’s policy framework to enable the university presidents to reshape programs to better meet the needs of Arizona’s citizens. Two features, mission differentiation for the three universities within the university system and a process for expanding the universities differentially based on demand, capture the essence of bridging to the future.

Within the concept of Changing Directions, the UA in Tucson proceeded with its plans to become a premier research university, adopting more rigorous admissions requirements at the undergraduate level, while the other two universities in the system pursued different strategies so that the full array of students would be met. Differential tuition at UA South in Sierra Vista was instituted to provide lower-cost instruction at the bachelor’s degree level in southeastern Arizona.

The Regents’ next step in implementing Changing Directions also was an effort to deal with increased student demand. This initiative, called A Redesigned Public University System, endeavored to further differentiate the universities in two ways: services provided and the way by which the services are funded. For the UA this meant that growth in serving undergraduates in southern Arizona would be handled mostly by UA South and NAU, which could provide quality instruction at a lower cost. The intention was to focus the entire UA main campus more directly on research at the highest levels. From the funding perspective, this further differentiation meant that tuition and mandatory fee ranges would be highest at the campuses where costs for research were the greatest—at UA main campus, for example—and that these ranges would be lowest at the 2 + 2 locations or other baccalaureate-focused locations throughout the state, such as UA South. The redesign plan concluded:
“This … sets a path for the Arizona University System to carry out its mission to provide quality education and access in ways that will meet the demands of the next decades. It also provides a commitment to accountability to assure the public that, in exchange for its support, it can expect certain results and choices.”

The next initiative, 2020 Vision, serves as a long-term strategic plan, from 2008 to 2020, effort for the Arizona University System (AUS), and was developed as a logical next step to the two earlier initiatives. The AUS mission statement says its goals are:

- To increase the educational attainment of Arizona citizens by producing enough high-quality university degrees for the state to be nationally competitive by the year 2020.
- To increase the prominence of the system’s research enterprise so that it can contribute to the knowledge economy and improve the quality of life in Arizona.
- To provide the educated workforce needed to fill shortages and to stimulate demand for higher paying jobs in Arizona.

The ability of the UA and the entire Arizona University System to achieve the ambitious goals spelled out in 2020 Vision is now seen as being unequal to the state’s ambitions for the AUS. A large part of the plan revolves around increasing the educational attainment rate of the entire state from kindergarten through community college, thereby strengthening the foundations for improved university education. When the plan was written in 2008, the economic recession was seen as a “short-term setback.” Now that a return to 2006 funding levels will probably not be realized until 2015, the characterization seems overly optimistic. Efforts to provide greater accessibility in line with differentiated missions and tuition continue at a pace realistic with the UA's current funding situation.

Major Changes since the 2000 Reaccreditation

Organizational Change

Funding stress combined with ABOR initiatives for mission differentiation have shaped the university’s organizational change over the past 10 years. As a result, two major campus efforts, Focused Excellence and Transformation, have been undertaken to prioritize the university’s work in order to conserve funds while advancing the university’s mission. In light of the growth of Arizona’s universities and the changing environment in which they operate and compete, new university peer sets were developed. In February of 2009 ABOR approved the revised peer lists for Arizona’s three universities.

Focused Excellence was inspired, in part, by ABOR’s Changing Directions initiative and was intended to recognize excellence that already existed and to protect the university’s prominence in those domains by focusing resources. The two goals of Focused Excellence were stated as:

- Achieving excellence in an array of compelling, research-based activities that advance creativity, innovation, knowledge and human understanding while benefiting the state, the nation and the world.

- Serving undergraduate, graduate, and professional students creatively and effectively as one of the nation’s premier public research universities, emphasizing learner-centered approaches that engage undergraduates in research while also preparing undergraduate, graduate, and professional students to be tomorrow’s leaders.

Focused Excellence did not realize its full potential for academic refocusing although Arizona International College and several programs were eliminated and some departments were merged. Focused Excellence coupled with Changing Directions and its focus on differentiation according to strengths did prompt the UA’s request and ABOR approval to admit students more selectively. These efforts fostered the first organizational shift of the decade in 2002. The biggest shift was in the creation of enrollment management as a vice presidential and cabinet level unit.

In 2006 Robert N. Shelton was inducted as President; Meredith Hay began her tenure as Provost in 2008. Although the significance of the current economic crisis, in size and scope, did not start to become clear until Fall 2008, Arizona’s universities had been feeling state funding stress for nearly seven years. The Transformation Plan was a restructuring initiative begun prior to the onset of the 2008 financial crisis and designed to enable the University to take advantage of new opportunities and maximize its efficiency in a highly dynamic and financially stressed environment. The Provost’s office received more than 75 white papers in response to the call for transformation recommendations. These papers
were reviewed by the Strategic Planning and Budget Advisory Committee, which advised the Provost regarding the suggested transformations. The reorganizations implemented as a result of the Transformation Plan include: 16 departments reorganized into eight departments; 40 departments and units consolidated into 13 schools; four colleges combined in a partnership that is the Colleges of Letters, Arts, and Science; and 42 academic programs closed or merged.

In the words of Provost Hay, “The result was truly transformational. Consolidations and re-alignments of colleges and departments improve access and quality, better serve the 21st-century student, and break down institutional barriers and encourage collaborative work among the faculty. The university also benefits from the reductions of administrative costs and efficiencies intrinsic to the Transformation Plan. When the budget disaster hit, the plan was crucial in setting priorities and guiding budget decisions.”

Of great significance to the UA are the recent efforts of Provost Hay and Dr. William Crist, UA Vice President for Health Affairs, to forge the university’s fragmented health sciences structure into a more efficient and viable collaboration for clinical teaching, research and patient care.

The UA Budget Redesign project has been in development for nearly two years and preliminary work is being completed in Fall 2010 with implementation scheduled to begin in July of 2011. The project is intended to provide more budget transparency to departments and units, thus allowing for more informed decision-making and budgetary responsibility. The project will not change overall resource levels but it should lead to greater sustainability in the university’s budgeting processes.

Academic Program Changes
Many academic program changes are touched on in this introduction; a complete listing of such changes over the past 10 years may be found in the document center.

Campus Emergency Response Training
Two events within the past 10 years alerted the University of Arizona to inadequacies in its overall Campus Emergency Response plans. The first was the terrorist attacks of September 11, 2001. The second was the tragic October 2002 shootings at the UA College of Nursing, in which a troubled nursing student shot and killed three professors before taking his own life. The campus responded to these events with action. A widely lauded video that addresses dealing with disruptive student behavior was produced with funds from PepsiCo, and the UA Campus Emergency Response Team (UACERT) has honed its plans and training to make the UA one of the best-prepared campuses in the country.

It is especially rare for a university to have people trained in Critical Incident Stress Management (CISM). At the time of the October 2002 shootings, two UA employees, working in the area of Life and Work Connections, were trained in CISM. These individuals worked with College of Nursing employees and students for two years after the shootings to help them cope with the tragedy. The UA now has a 24-member CISM team, representative of many units across campus. Team members respond to an average of 20 to 30 incidents per year, ranging from workplace accidents to suicide attempts, student deaths and other crises.

Infrastructure and Facilities Changes
UA efforts to improve its infrastructure in order to support its mission more effectively have continued apace over the past 10 years. The variety of these projects reflects university planning attention to all aspects of its mission as well as its commitment to students and academic excellence.

Student-Focused Projects by Completion Date
- March 2011, projected—Sixth Street Residence Halls: This project will provide new on campus housing for 1,088 undergraduate students. The buildings are being constructed on two sites along Sixth Street, one at Tyndall Avenue, and one at Highland Avenue. These new residence halls will be or-
organized into learning communities to promote academic success and self-development. Four- to six-story buildings of brick, metal, and stucco, are designed around interior courtyards to create secure private space for student circulation and gathering.

- **November 2009—Student Recreation Center Expansion:** This expansion provides additional fitness facilities for weight training and cardio equipment, a Multipurpose Athletic Court for expanded sport and recreation programs; space for Outdoor Adventures, which offers student, faculty, and staff outdoor recreational activities; and much needed professional outdoor space for casual recreation activities of the Department of Campus Recreation.

- **October 2008—Intercollegiat Athletics (ICA) Facility:** This project comprised three elements to enhance training and competition facilities for several athletic programs, and is part of a long-term plan to upgrade facilities as donor funding becomes available. The three elements are an indoor practice facility, gymnastics training facility expansion, and Hillenbrand Aquatic Center diving pool, all financed with funds generated by ICA, all designed to increase the university’s ability to recruit top-level student athletes and coaches.

- **February 2004—Highland District Housing:** This is a new three-story multi-building that includes three residence halls with a total of 770 beds. It also houses the El Portal Residence Life Administrative Offices and facilities for the Disability Resource Center and Adaptive Athletics, and the new La Aldea residence for graduate students.

- **Fall 2003—McKale Weight Room Expansion and Athletic Heritage Center:** This expansion includes a 10,000 square-foot strength and conditioning facility and the Heritage Center, which includes a Hall of Fame for special events. This project was funded entirely from gifts.

- **September 2001—The Strategic Alternative Learning Techniques (SALT) Center:** This moved from cramped quarters in Old Main to a 16,000 square-foot building funded entirely from donations. SALT students receive individualized educational planning and monitoring, assistance from certified tutors with coursework, and workshops geared toward their individual academic needs.

- **September 2001—Manual Pacheco Integrated Learning Center:** This classroom structure was designed to facilitate the core curriculum for freshmen. The ILC symbolizes a different way of thinking about learning methods and environments. It is designed to create an outstanding first-year-experience curriculum, as well as to address current institutional challenges in successfully delivering a general education curriculum.

**Program-Focused Projects by Completion Date**

- **August 2008—The Law Commons:** This project is part of the James E. Rogers College of Law’s long-range plan to enhance its national reputation as a top-tier law school. Critical steps include modernizing the library, providing additional and improved spaces for student activities and organizations; renovating the three large detached classrooms; increasing space for visiting faculty and scholars; modernizing instructional space while integrating technology; expanding and improving the courtyard to allow enjoyment of Arizona weather all year; and fundamentally transforming the experiential character of the facility.

- **June 2008—Arizona Cancer Center Leon Levy Building:** This first-floor remodel of the Arizona Cancer Center reconfigured former clinical space into offices and support space for Cancer Center faculty and staff.

- **May 2008—McClelland Park:** This gift-funded facility houses the John and Doris Norton School of Family and Consumer Sciences, of the College of Agriculture and Life Sciences. The project addressed both the quality and quantity of space, and consolidated programs into one space.

- **August 2007—UA Poetry Center and the Helen S. Schaefer Building:** This gift-funded facility houses academic programs and outreach activities for students, teachers, writers, and visiting scholars. The new facility houses all of the UA’s valuable poetry-related library books, journals and multi-media materials. The project also provides a permanent home for Humanities Seminars. Over the years, the UA Poetry Center has become a leading international literary arts center.
Chapter 1: Introduction

- **July 2007—Phoenix Biomedical Campus:** This complex in downtown Phoenix houses academic programs from the colleges of Medicine, Pharmacy, and Public Health, as well as to the UA-affiliated Translational Genomics Research Institute and the ABC I research facility. The campus was developed by ABOR, the state universities, and the City of Phoenix. The College of Medicine occupies the former Phoenix Union High School building. Ground was broken for the 286,000 square-foot Health Sciences Education Building in May 2010. This will be the future home of the UA's College of Medicine – Phoenix, as well as programs of the UA colleges of pharmacy, nursing and public health, and Northern Arizona University’s College of Health and Human Services program. Planning also has begun on a $142 million, 250,000 square-foot extension of the Arizona Cancer Center.

- **March 2007—Medical Research Building:** This high-technology laboratory for medical research is the companion building to the Keating Building.

- **February 2007—Architecture Building Expansion:** This three-story addition provides a central location for collaborative architecture and landscape architecture studios, and is connected to the existing Architecture Building. A materials lab was developed on the first floor of the addition to meet the changing demands of the educational program.

- **March 2007—Medical Research Building:** The 82,000 square-foot Peter and Paula Fasseas Cancer Clinic is the new Arizona Cancer Center outpatient clinic.

- **February 2007—Arizona Cancer Center at UMC North:** The new multi-story Chemical Sciences Building consolidated the Chemistry instruction and research programs into one central location. The structure is located adjacent to the existing Chemistry building providing needed laboratory, support and office space.

- **June 2006—Chemistry Building Expansion/Chemical Sciences Building:** The new multi-story Chemical Sciences Building consolidated the Chemistry instruction and research programs into one central location. The structure is located adjacent to the existing Chemistry building providing needed laboratory, support and office space.

- **April 2006—Meinel Optical Sciences Building:** This building received a 2007 American Institute of Architects National Honor Award for Architecture, the profession’s highest recognition for work that exemplifies excellence in architecture, interior design, and urban planning. It was one of only 11 buildings worldwide and the only Tucson building to ever receive an honor award in the award’s 59-year history. The goal of the project was to create a building commensurate with the international reputation of the College of Optical Sciences and enable the College to retain its status as one of the world’s premier optical instructional and research programs. The new expansion includes meeting space, faculty offices, and research labs.

- **March 2006—Roy P. Drachman Hall:** This provides a new interdisciplinary academic building, integrating the Mel and Enid Zuckerman College of Public Health, office and instructional space for the College of Pharmacy and instructional space for the College of Nursing.
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- **July 2003—Gittings Complex Expansion/Stevie Eller Dance Theatre:** Expands the Ina E. Gittings complex for the School of Dance. The facility includes a new performance dance venue, Stevie Eller Dance Theatre, of approximately 300 seats, studio and support spaces to the east of the existing Gittings facility.

- **February 2002—Learning Services Building:** This new facility houses and supports the programs of the College of Humanities.

- **May 2000—Police Department Building:** This 16,000 square-foot building houses the fully certified UA Police Department and its 100 employees.

### Campus Support and Services by Completion Date

- **June 2005—Highland Avenue Parking Garage:** This 1,570 space parking structure serves the northeast campus district and the Arizona Health Sciences Center, which includes the colleges of medicine, nursing, pharmacy and public health, UMC and clinical research facilities. Additional spaces were needed to meet existing and projected parking demands.

- **January 2003—Student Union/Memorial Center/Bookstore:** The new 405,000 square foot Student Union complex replaced the 1951 Memorial Student Union and Bookstore that was functionally obsolete, physically deteriorated, and deficient in fire/ life safety systems beyond repair and rehabilitation.

- **March 2002—Main Library Expansion and Special Collections:** Addition of a fifth floor to the west pod for administrative services, first-floor west pod renovations to create the Information Commons, first- and second-floor center pod renovations for administration consolidation, and building-wide state fire marshal requirements.

### RESEARCH EXPENDITURES

Funding for research expenditures increased more than 66 percent, equal to more than $218 million, since fiscal year 2000. Based on 2007-2008 rankings published by NSF in early 2010 the UA ranked number one among 679 universities in research expenditures in the physical sciences, and 16th for in research spending among all public universities. Another addition to the UA’s list of distinguished programs was announced in 2010 when *U.S. News and World Report* ranked the university’s graduate program in geology in a No. 1 tie with the geology program at the University of Michigan. The university is proud of its research and the progress made but is aware that it has opportunities to increase significantly its level of research expenditures in the health sciences. The reorganization that will bring UMC and UPH together, along with the continuing expansion of the Health Sciences campus in Phoenix, should foster a greater capacity to successfully compete for research funds in this area. The UA’s research is characterized by interdisciplinary approaches to complex challenges, both scholarly and practical.

“The School of Dance faculty not only believe in us, they push us! They let us know what it is that we need to do in order to achieve our goals.”

*Undergraduate major in Dance from the Assessment Case Study*

### ACCREDITATION HISTORY

The University of Arizona became affiliated with the Higher Learning Commission of the North Central Association of Colleges and Schools in 1917. Since that time, the UA has been reaccredited at each decennial review, most recently in spring 2000. As a result of the 2000 review, the UA submitted two progress reports. The first, in August 2003, chronicled efforts to increase the diverse make-up of the UA faculty, administration, and staff. The second tracked UA progress in the area of student outcomes assessment and was submitted in March 2005. The North Central Association accepted both reports.
## Challenge/Suggestions

The University is encouraged to give careful consideration to the impact that debt financing of future buildings is having on the operating budget.

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<th>Response</th>
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<tr>
<td>The UA’s debt financing for buildings is administered through a comprehensive Regent approved due-diligence process. A formal Capital Improvement Plan (CIP) prepared by UA staff annually initiates the process. When debt financing is required to fund a project, the University utilizes its Debt Management Guidelines document to apply best practices for the debt issuance. The financial impact assessment also involves utilizing a debt capacity financial model to calculate the annual debt service amount on new debt financing for a building project and show the impact that the debt service has on the operating budget. Similar to establishing a permanent funding for operations and maintenance costs, the university must identify a permanent funding source to meet the new debt service obligation and incorporate it into the operating budget.</td>
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<th>Closer coordination is needed among planning, budgeting, and implementation efforts.</th>
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<td>Since the 2000 review the university has steadily worked to implement a more inclusive budgeting and decision-making process. The Strategic Planning and Budget Advisory Committee (SPBAC) has functioned throughout this period and is charged with the development of the University Strategic Plan and, as a function of shared governance, participates in the development of yearly budgets and budget requests. Collectively resource investments are directly aligned with and support departmental and university strategic plans.</td>
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<th>The open access policies of the University carry with them an increasing challenge of serving a student body with disparate academic needs. The Team vigorously recommends that the Regents consider current admission policies on a system-wide basis to insure the most appropriate match with the institutional mission. If the current admissions policy for the University is continued, the University should develop comprehensive plans to anticipate divergent academic needs of different tiers of the student body.</th>
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<td>As a part of its Changing Directions initiative begun in 2002, the Arizona Board of Regents (ABOR) concluded that Arizona’s universities should have the opportunity to exercise greater selectivity in admissions decisions expecting that they would do so differentially so that all qualified students would have their needs met in at least one public university, but not necessarily in all three. This enabled UA to target students with the best chance to persist in the UA academic environment through graduation. The first year that greater selectivity was allowed for the UA was 2006. Further differentiation of UA South through the Outreach College serves to address differing student needs. The state of Arizona does not contribute significantly toward student financial aid. Therefore, a significant portion of each increase in tuition is committed to increase financial aid. The Arizona Assurance initiative is a jointly public-private funded financial aid program that provides qualified in-state students the opportunity to graduate in four years without ever borrowing money. It covers college costs including tuition, books, and room and board for in-state students from families with an adjusted gross income of up to $42,400 per year.</td>
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**RESPONSE TO 2000 SITE TEAM OBSERVATIONS (CONTINUED)**

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<th>The Team suggests that the University utilize a variety of methods to share successful strategies for retention of under-represented minorities.</th>
<th>As a public university committed to open access, the University continues to struggle to achieve retention rates, which more closely mirror those of other top institutions. Retention rates are holding steady near the top of the university’s historical range but these are relatively low. Minority enrollment is increasing both in total number and percentage. While the retention rate of minority students(^{16}) (as a whole) are very near the institution’s retention rate, graduation rates still lag behind. New programs have been developed and implemented, some of these focus on underrepresented populations. Early results are promising but it is too soon to declare victory.</th>
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<tr>
<td>Despite progress, strong leadership and a changed culture is needed to recruit and retain a diverse faculty.</td>
<td>In 2000, former President Likins worked with a group of faculty to conduct a climate study at the UA. The study resulted in the Millennium Report(^{17}) and a group of faculty supported committees to follow up—the Millennium Report Oversight Committee (MROC). College-level MROCs were created to focus work and attention at the level where faculty lived. MROC focused on three themes: diversity, hospitable climate, and equity. A few years later, a second study, Millennium 2,(^{18}) was initiated to focus on issues related to staff and appointed professionals. As MROC was winding down, a group of UA faculty and administrators applied for and received in 2006 a highly competitive NSF ADVANCE grant(^{19}) to change the university culture to reduce the impact of unconscious bias on decision making at the UA. The group provides resources for administrators and faculty to address issues of evaluation, hiring and retaining a diverse faculty, mentoring, and departmental climate. Other work of this group seeks to provide heads, directors, and deans with tools to develop equitable hiring and retention packages as well as to recognize how salary changes affect salary structures within units. Despite these focused efforts and improvements in some units, the UA’s overall faculty diversity is little changed from the time of the 2000 site visit. The issue and campus concerns continue as do campus efforts to improve retention as well as recruitment of a diverse faculty. As is the case with all faculty, salaries lag. This issue is also a focus of the current self-study.</td>
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<td>The team recommends that the University select a more refined peer group for benchmarking.</td>
<td>The ABOR, in consultation with the university presidents and an outside consultant, selected new peers for each of Arizona’s universities in February of 2009.</td>
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<td>The University’s Office of Human Resources should develop a training program for new department heads on topics such as planning, assessment, EEO/AA issues, conflict resolution, etc. There is also a need for more campus-wide and college-based programs for faculty and staff development.</td>
<td>The UA’s Human Resources and the Office of Institutional Equity routinely offers professional development seminars and provides consulting services to individual managers as needed. Each year approximately 800 managers and supervisors take advantage of professional development offerings provided through Human Resources’ University Leadership Institute and Successful Supervisor Series. Plans are underway to develop a “Moving into Management” program as well. Human Resources has also partnered with the Provost’s office to ensure that new academic department heads begin with foundational information on employment-related issues.</td>
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Most academic units have not completely implemented assessment plans; assessment of graduate education is less developed than for undergraduate programs.

The assessment program would benefit from (1) appropriate linkages between the academic programs and student life in assessment planning and activity; (2) student representation on college and program committees; (3) effective communication to students about the purposes of assessment at the institutions and their role in the program.

During the fall of 2000, the Office of the Provost introduced an ambitious schedule for the UA to fully implement its student outcomes assessment plan and to focus more attention on the assessment of graduate education. The schedule was aligned with the UA's Academic Program Review (APR) process.

The schedule also included the undergraduate general education program and student support programs in an effort to identify linkages between the academic programs and student life in assessment and planning activities. As part of the schedule, academic and student affairs units were asked to provide information about learning outcomes, assessment activities, and the use of assessment results. An assessment website was developed and allows units to showcase assessment efforts at both the undergraduate and graduate levels.

The Assessment Coordinating Council (ACC), which includes representatives from the Graduate College and the Office of Student Affairs, coordinates assessment activities and works to strengthen linkages between academic and student support programs. While students are often consulted in the development of assessment activities, their representation on college and program committees has not yet been accomplished.

Steady progress has been made since the Assessment Progress Report submitted to the HLC in 2005 and is highlighted throughout the present self-study.

The University should address graduate students’ concerns, including course offerings, workloads, compensation, research opportunities, and housing.

Consideration should be given to including the Graduate Dean on the Academic Council in order to provide better coordination and integration of all academic programs.

The UA and the Graduate and Professional Student Council have addressed a wide range of graduate student concerns. Successes include new graduate student housing, La Aldea, located adjacent to main campus; provision of health insurance; 100 percent tuition remission for graduate assistants; and widespread representation of graduate students on high-level University committees. Workload and compensation remain serious concerns, especially for teaching assistants in the Humanities. Several workload comparisons have been carried out over the last decade but a long-term solution remains elusive.

The Graduate Dean was made a member of Academic Council in 2006 (since renamed Dean’s Council) as well as the Provost’s Management Group (since renamed Team Provost).

The geographical location of the research park presents a challenge to integration with on-campus activities. The Team feels that using it as surge space is not consistent with the park’s mission of supporting emerging technologies and business.

The physical constraints of nearly-fixed geographical boundaries present challenges to the continued growth of campus.

The Science and Technology Park is one of the most successful of its kind in the nation, but it is not an ideal surge space location for overflow campus activities. Its contributions are of great value to the Southern Arizona business community, as well as the community outreach and technology transfer aspects of the university’s mission. The UA’s new Arizona Bioscience Park, located within a few miles of the main campus, will provide a separate facility designed especially for companies working in biosciences, biotechnology, life sciences, and pharmaceuticals with closer interaction with campus-based academic units. The Bio Park 54-acre complex will enhance the UA’s competitive edge in bioscience research and complement the efforts of southern Arizona’s existing bioscience and biotechnology facilities.
### RESPONSE TO 2000 SITE TEAM OBSERVATIONS (CONTINUED)

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<tr>
<th>The updated Comprehensive Campus Plan (CCP) explores potential opportunities for new off-campus locations for selected university facilities. The downtown area, with a new modern streetcar connection to campus, provides many such possibilities. In January of 2002 many of the university’s support services were moved to the former Tucson Electric Power Building in downtown Tucson thus also opening up new opportunities for space usage on campus. Other options include privatized student housing around the edges of campus, as well as new facilities at the nearby Campbell Farm and the BioPark locations to the north and south of campus. Two-plus-Two partnerships being developed with community colleges also provide relief related to growth needs. With the flexible options being developed through new programs and the CCP update, the UA has the ability to meet its growth needs far into the future.</th>
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<td>Measurable student outcomes at the university-wide level include tabulating the number of students who participate in research experiences through academic credits and self-reports. In addition, most of the structured programs conduct program evaluations, which include outcomes data. The number of undergraduates employed on funded research is another university-wide measure of student involvement in research.</td>
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<td>In addition to the structured programs, professors across campus find ways to integrate significant research experiences into many of the undergraduate classes offered. A general education class led a UA undergraduate to major in astronomy and to seek out involvement with the UA Mars mission. This student was the first driver of the successful Mars Rover (a UA directed project). Numbers may measure student outcomes but are only a small part of the story. Moreover, students in focus groups stated they had chosen the UA because of its undergraduate research opportunities (See Criterion Three)</td>
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<td>It will be a challenge to translate the vision of the student-centered research university into measurable student outcomes.</td>
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<td>A coherent plan is needed for the UA South and other branch campuses.</td>
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<td>The UA recognized that a number of outreach and distributed education functions, including branch campuses, had evolved quite independently and in some instances without a common vision. The university initiated an informal planning process in 2004 and in 2006 placed UA South, International Affairs, Cooperative Extension, and the Former Office of Continuing Education and Academic Outreach (CEAO) under a newly established Office of the Vice President for Outreach (VPO).</td>
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<td>After extensive assessment and stakeholder engagement led by the VPO, the UA concluded that these units had indeed been allowed to drift from the university’s core mission. The team concluded that these units, as well as International Affairs, must be reorganized and brought into more close alignment, not only with one another but also with the UA mission. As an extension of this effort, the Faculty Senate (2008) agreed to redefine CEAO as the Outreach College. The combined units are finally aligned under a common</td>
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<td>The Team is concerned that the University’s well-articulated and high ideals in outreach are not being fully realized because of lack of coordination and the remoteness of communities to be served. Excellent outreach efforts in such areas as medicine, education, and agriculture, the museums, and public policy could be better integrated, achieving greater impact. Direct support of industry training, certification programs, and graduate education for non-traditional students represent opportunities to be explored.</td>
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<td>The University should develop close working relationships with branch campuses and develop management strategies based on this understanding. For example, it should address the lack of library resources and allow flexibility in curriculum design.</td>
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mission. An immediate outcome of the reorganization was the collaborative development of the Alternative Pathways Program, which is focused on leveraging these new alignments to create multiple pathways to high demand degrees, some available in multiple locations. This model facilitates close coordination between involved units such as Outreach College and UA South.

As a result of this reorganization, UA South enrollment has increased 40%, online enrollment has increased 50%, Evening & Weekend enrollments have increased fourfold, and participation in Study Abroad and enrollment of international students (particularly sponsored students) have increased, with additional significant increases expected in the near future.

Awareness of increased globalization is not evident to the Team, and increased attention could be given to the internationalization of the University as measured by student participation in study abroad programs and the number of and support for international visitors.

A total of 39 different languages are taught on campus and three academic centers have received the U.S. Title VI National Resource Center designation from the U.S. Department of Education. The UA is also home to one of 56 Confucius Institutes in universities throughout the United States.

The division of International Affairs is comprised of five offices; the offices of the Executive Director, International Faculty and Scholars, International Student Programs and Services, Study Abroad and Student Exchange, and the U.S. Passport Application Acceptance Facility. Together these offices provide a wide range of services to the campus and local communities. These units report to the Vice Provost for Outreach and Global Initiatives.

The Office of Western Hemispheric Programs is a unit fully dedicated to the identification of collaborative opportunities with Canada, Mexico, and Latin America. This office serves as a venue and resource center for interested faculty, administrators and students. It also maintains an effective presence with relevant institutions, and agencies in the Western Hemisphere. The university has an office in Mexico City and has teamed with CONACYT, the Mexican Council for Science and Technology to offer funding for Mexican doctoral students. The program provides co-financed, 5-year fellowships to 100 doctoral students, supplying students with a monthly living stipend and covering registration fees and medical insurance.

The UA offers opportunities to undergraduate and graduate/professional students to study abroad in more than 50 countries. UA ranks fifteenth among Doctoral/Research institutions in the number of students studying abroad, according to the most recent data (Institute for International Education, 2008). In 2006-2007, 1,800 UA students participated in study abroad and student exchange programs. The number of students participating in Study Abroad has grown 7 percent annually over the last decade (additional information covered in Criterion 3).
**Chapter 1: Introduction**

The Team encourages the University to develop public, civic, and business partnerships to address the needs of Arizona communities, including efforts in housing, transportation, diversity, growth, and policy planning.

The Arizona Center for Innovation assists the growth of nascent companies by providing business education and assistance in the Southern Arizona region at the UA Science and Technology Park. Community service is found in notable UA programs such as UA Cares, CATS in the Community, and the Eller College of Management Junior Achievement Program.

In August 2006, the College of Education began a path-breaking initiative—the Wildcat Charter School for grades 6-8. Particular emphasis is on providing high quality STEM education. Plans include expanding this into an elementary school in 2011. In 2007-08 the College created its own Office for Educational Outreach to better coordinate existing programs as well as to promote new partnerships with regional school districts and charter schools.

The College of Public Health maintains active partnerships with local, county, state, and federal agencies for emergency planning in the event of natural disaster or act of terrorism.

Given that the success of the “student-centered research university” depends on the vitality of the research mission of the University, sufficient attention needs to be paid to the infrastructure and priorities that will maintain research momentum.

The university has focused aggressively on its research mission over the past 10 years. Research has flourished in areas. Of importance was the development of BIO5, an institute of collaborative bioresearch among faculty and students brought together in a new building, the Keating Bioresearch Building. BIO5 brings together faculty, staff, and students to treat disease, feed humanity, and preserve livable environments. The program creates science, industry, and education partnerships to engage in leading-edge research, translate innovations to the market, and inspire and train the next generation of scientists. The Institute of the Environment provides disciplinary and interdisciplinary research relating to the environment from local to global scale, with a focus on ways in which this environment is likely to change and mechanisms for engagement with society’s decision makers.

As the University enters the next phase of strategic planning, it will be important to create a process for refining the University’s research mission.

Strategic investment has been the key to research growth. Through campus-wide conversations, the Strategic Planning and Budget Advisory Committee (SPBAC) developed a list of research priorities that are articulated in the university’s five-year strategic plan. These priorities inform strategic plans at the level of the Provost and Vice President for Research, as well as colleges and departments.

As part of ABOR’s 2020 process and in response to Arizona’s growing population and its need to remain competitive, the three university presidents developed “Pathways: Access-driven Architecture for the Arizona University System.” The overall idea is to provide top quality education in ways and at sites that are more accessible and less costly than the main-campuses with their significant research component.
In addition to partnerships such as those suggested above, the university could consider opportunities to collaborate with ASU and NAU. As has been demonstrated by the cooperative agreements forged within the Consortium for Institutional Collaboration, investments in several areas may be leveraged for the betterment of all (such as library cooperation, technology transfer, faculty and staff training and development, to name a few).

The Libraries of the three state universities have a long record of cooperation. For over 20 years the Libraries have coordinated collecting activities which include purchasing and de-selection. Licensing dollars are leveraged to negotiate savings on purchases and thus have increased access to electronic resources. Recently, a joint subscription to DVDs was negotiated dramatically increasing access at all three institutions. Deals for all three libraries are also negotiated through the Greater Western Library Alliance and the Amigos consortia. The savings from these activities to the UA in FY09 were over one million dollars and the University received access to over six million dollars worth of materials for which it did not pay.

The staffs of the three universities meet regularly to exchange ideas on services and efficiencies as well as do joint training. The group has won several joint grant projects over the years and is resubmitting an NEH grant called "Why Arizona."³³

The UA College of Medicine – Phoenix in partnership with Arizona State University was implemented in 2006 when the Phoenix Biomedical Campus opened. This partnership was a key component in obtaining legislative approval for establishing a university-based public medical school in Phoenix. As the economic downturn hit the state, all three state universities were negatively impacted by fund reductions. This occurred just as an expansion of the medical school was underway. The expansion plan included a new education building that would house ASU, NAU and UA activities. In April, 2010, ASU decided it was unable to continue the partnership for financial reasons; the partnership was ended within weeks. Part of this change resulted in new building space designated for ASU being shelled which requires a space redesign; the UA and NAU, to a lesser degree, will have to absorb a larger share of the building debt and operational expenses. NAU is still committed to moving into the new education building.

The roles of appointed staff and support staff in university governance need to be more fully articulated.

Appointed staff members (professionals) typically have one-year contracts with 90-day notice of non-reappointment. A system of somewhat longer contracts for staff having 10 or more years of University employment should be considered.

There is institutional commitment to incorporate the voices and perspectives of these groups. This is best exemplified by the 2006 adoption of the Policy on University Policy Formulation that requires both groups to review proposals for new policies as well as policy revisions.

ABOR has approved the issuance of multiple-year contracts for certain professionals but the UA has declined to do so citing the need to be flexible in response to emerging needs and economic challenges. The University believes its current approach allows it to be competitive in the academic marketplace. The Millenium project is also focusing on staff. Criteria 2 and 3 recommendations include providing more robust career paths for non-TTE faculty with long-term relationships with units.
### RESPONSE TO 2000 SITE TEAM OBSERVATIONS (CONTINUED)

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<tr>
<th>The University needs to continue to enhance relations with alumni and further encourage alumni participation in annual giving.</th>
<th>In 2007 Christopher J. Vlahos was named president and executive director of the Alumni Association. Serious effort is devoted to gathering a complete and accurate base of alumni address information, and accumulating a greater number of alumni e-mail addresses. A recent e-mail project elevated the current alumni capture level to approximately 46% of the total alumni base. An upcoming alumni directory project will seek to expand significantly the email pool and provide updates to at least 75% of all alumni addresses. Leadership at the Alumni Association and the University Foundation are now working very well together.</th>
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<td>A substantial deficit in tax and tuition income, combined with an apparent lack of appreciation and understanding of higher education by certain elements of State government, presents significant challenges for internal management and public advocacy of the University’s goals including (1) support for academic programs; (2) the research library; (3) new buildings; (4) building refurbishment; (5) information technology; (6) competitive faculty, staff, and teaching assistant salaries.</td>
<td>The Evaluation Team observation is unfortunately as true today as ever. Over the past 10 years the UA has worked to improve its relationship with the state legislature in a number of important ways. In addition to lobbying staff, the UA hired three outside firms to help represent the university’s position to legislators. The President’s visits to the Capitol have increased; efforts to bring key legislators to campus have also increased; the UA has also initiated events at the Capitol to bring legislators together with key university leaders. Numerous communications efforts have been developed to inform legislators and opinion leaders of the value and importance of the UA to the state, and particularly the value of UA research. Along with directed efforts, more than 52,000 news stories were published globally last year about UA, and more than half featured the UA’s research efforts. UANow, a daily newswire service initiated in late 2007, expects to surpass 150,000 subscribers by Fall 2010—a list that includes many legislators and staff members. The deficit of tuition income has led to reluctant but substantial increases in tuition, along with increases in allocations for financial aid.</td>
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### THE SELF-STUDY PROCESS

The University of Arizona sees accreditation as an opportunity to enhance the value and quality of its programs. More than a matter of compliance, accreditation is an opportunity for self-evaluation, to identify a number of concrete goals for the future and establish the university’s capacity to achieve these goals. With this vision in mind, “Bridging to the Future” was selected as the project theme.

In Spring 2008, the process to request continued accreditation began with the appointment of Beth Mitchneck, Ph.D, Associate Dean of the Colleges of Letters, Arts and Science, and Randall M. (Randy) Richardson, Ph.D., Professor of Geosci-
The steering committee listened to and approved frequent progress reports from the executive committee and the working teams. During these review sessions, all of the teams had the opportunity to learn from and coordinate with each other. The steering committee had the opportunity to offer recommendations and ideas to improve the study. The teams worked through 2009 to produce a formal draft report.

The executive committee worked with the teams’ reports to produce a full draft of the self-study. The teams’ reports were reviewed for tone, accuracy and consistency, not only internal, but also across criteria. This editing process included reviews by both university employees and community members. The self-study was made available to the university community in Fall 2010.
CHAPTER 1 – INTRODUCTION: ENDNOTES

1. http://www.azregents.edu/
7. http://provost.arizona.edu/node/105
15. http://assurance.arizona.edu/Home
17. http://www.u.arizona.edu/~millen/phase1/report-detailed.htm
19. http://www.advance.arizona.edu/
20. http://assessment.arizona.edu/
Chapter 2:
Mission and Integrity
(Criterion One)

Shelton promises adhering to the UA’s mission despite mounting budget cuts

By Will Ferguson
Arizona Daily Wildcat

In front of a crowd of 590 confirmed guests at the Grand Ballroom in the Student Union Memorial Center, UA President Robert Shelton spelled out the continuing mission of the university in simple terms at the 2009 State of the University address. Shelton focused on driving for academic excellence both in teaching and research despite nearly $110 million in state budget cuts. Shelton urges the university to remain academically competitive on a worldwide scale.

Shelton received a standing ovation upon the conclusion of his address, a speech several audience members felt captured both the positive and the negative.

"His speech captured all of the challenges but more importantly the opportunities facing the university," said Associated Students of the University of Arizona President Chris Nagata. "His presentation of these figures, despite all the negative things he mentioned, was very positive," said executive director Abel Serratos.

Shelton presented the financial hurdles facing the university. These hurdles will not be easy to overcome, he said. The university was forced to cut nearly a quarter of its state budget and faces further financial challenges in the years to come, Shelton said.

He emphasized that while the university will not fatten its mission, budget cuts made in the state legislature and the tightening national economy have required the university to make hard decisions and even harder cuts throughout the university.

“We proceed to lay out criteria that we would allow us to maintain a quality student experience,” Shelton said.

The criteria included protecting programs that had the capacity to attract investments from external sources and a focus on units that were central to meeting the state and the nation’s needs.

“We know, and I think most people would agree, if not everything equally we were doing the University of Arizona to a future of mediocrity,” he said.

Shelton said the decision to focus on preserving the research capacity of certain units and ratcheting up expenditure from both the public and the media on a regular basis.

For those of you who have never experienced the unique pleasure of daily doses of venomous, often hyperbolic public criticism, let me assure you that it ranks right there with getting a root canal,” he said.

“Ultimately that’s what a university should be about,” he said.

Despite cuts and the board, there are certain areas of the academic community that have not been pursued by the university, Shelton said.

"I would argue that we have a higher burden, a higher standard of excellence to be achieved," he said.

Despite substantial tuitions, Shelton said student debt is on the decline due to the university’s priority of protecting financial aid. As a result, he added, the financial aid package is on the rise.

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CHAPTER 2
Criterion One: Mission and Integrity

The Organization operates with integrity to ensure the fulfillment of its mission through structures and processes that involve the board, administration, faculty, staff, and students.

INTRODUCTION

The University of Arizona, a land-grant institution celebrating its 125th year in 2010, sees its mission as a seamless blend of creativity, scholarship and engagement. The University’s mission is stated as:

Building a better Arizona through access, quality and discovery.

The land-grant heritage of the University of Arizona imparts a responsibility to engage in creative scholarship and education that address the fundamental societal challenges facing Arizona, the American Southwest, the nation and the world.

As a public research powerhouse, the University of Arizona is committed to engaging society’s leaders in business, politics and local communities to find solutions to our state’s most challenging problems.

The comprehensive nature of the University of Arizona enables us to provide the sons and daughters of Arizona families with access to a broad-based, high-quality, research-focused education that empowers our graduates to be leaders in solving the most complex issues of society. Whether in teaching, research, outreach or student engagement, quality is the defining attribute of the University of Arizona’s mission.

Because of its land-grant status, the UA is committed to instructional programs that serve the people and economy of the state of Arizona. For the same reason, the UA focuses its creativity and discovery on both basic and translational research (see also Criterion Four). Only through this deep engagement with society can the university partner with its constituents to solve today’s complex social, economic and environmental concerns. Despite the dramatic changes occurring in higher education and the intense local and national pressures on university budgets, the UA remains committed to providing access, quality and discovery to the people of Arizona and all its other constituencies.

Some outstanding results of this commitment are:

- **Arizona Assurance**, started in 2008, is designed to improve access and success for in-state students from historically low-income backgrounds. This program is defined by its broad-based focus on success through mentoring, workshops, special success courses, career preparation and financial assistance. In the first year alone, retention rates for students in the program significantly improved over similarly situated students enrolled at the UA the year earlier without the benefit of the program.

- **UA ADVANCE**, funded in 2006 with a 5-year, $3.3 million Institutional Transformation award from the National Science Foundation, sets the groundwork to shape the UA as a work place with integrity and one where equity frames the experience of faculty. The award focuses on women in science, technology, engineering, and mathematics, yet all faculty may take advantage of the large variety of initiatives reshaping decision-making at the university.
• **Diversity Initiatives** demand inclusion of all individuals, regardless of race, ethnicity, religious preference, gender attributes and varying abilities. The UA boasts a model Disability Resources Center and is considered one of the most disabled-friendly campuses in the country. A recognized leader in adaptive athletics, the university promotes wheelchair sports and creates a quality environment of discovery for those with disabilities.

• **Promoting Integrity** has evolved from a reactive approach to one that is proactive. This has been a UA hallmark of the past 10 years. From the student code of conduct to research integrity to creating a safe work environment, offices throughout the UA take an education and awareness approach to achieving integrity.

• **The Arizona Telemedicine Program** extends access to high technology and top-quality medical services throughout the state, regionally and globally. In 2009 the program received a $1.13 million federal grant to create the Southwest Regional Telehealth Resource Center to support electronic health records and expand Telemedicine services.

**CORE COMPONENT 1A:**
The organization’s mission documents are clear and articulate publicly the organization’s commitments.

The mission of the Arizona Board of Regents (ABOR) clearly guides the mission of the University of Arizona. According to ABOR’s mission statement:

> The Arizona Board of Regents is committed to ensuring access for qualified residents of Arizona to undergraduate and graduate instruction; promoting the discovery, application, and dissemination of new knowledge; extending the benefits of university activities to Arizona’s citizens outside the university; and maximizing the benefits derived from the state’s investment in education.

In 2002, ABOR made a bold statement when it announced “Changing Directions.” The Regents strongly encouraged the three universities—the UA, Arizona State University and Northern Arizona University—capitalize on strengths and opportu-

The varying text in the UA’s mission statements highlights a structural issue facing many universities. Each new president frames the institution’s focus based on key societal needs and the mandates of the Board of Regents. Over time, the university’s focus has become that of a student-centered research university. The wording of mission statements and strategic plans has evolved, yet the fundamental mission has not changed. The land-grant mission is important, and the focus on access, quality and discovery remain constant over time.

Many units of the UA have their own mission statements and those clearly align with that of the university. The Arizona Health Sciences Center (AHSC) mission statement shows how each of its divisions, with individual missions, clearly reflects the stated mission of the UA. AHSC also illustrates how the university can achieve its mission through the work of a variety of diverse units. The mission of the Arizona Health Sciences Center (AHSC) is:

> To provide healthcare education, research, patient care and service for the people of Arizona. This corresponds directly to the three-fold mission of the university. AHSC faculty, staff and students consistently fulfill that mission by offering their expertise in healthcare programs throughout Arizona.

AHSC has two campuses. The original site in Tucson, which opened in 1967, houses the colleges of Medicine, Nursing, Pharmacy and Public Health as well as University Medical Center, a

“To be nationally competitive in the percentage of Arizona’s citizens with a high-quality bachelor’s degree by providing affordable access through a well-coordinated and aligned system.”

Arizona Board of Regents 2020 Plan Goal One EDUCATIONAL EXCELLENCE
487-bed teaching hospital. The second campus in Phoenix, the Phoenix Biomedical Campus (PBC), opened in 2007. This location houses academic programs from the Colleges of Medicine, Pharmacy, and Public Health, and is home to the UA-affiliated Translational Genomics Research Institute (TGen). It has been developed by ABOR, the state universities, and the City of Phoenix. Current facilities include the former Phoenix Union High School building and a research facility (ABC l). In May 2010, ground was broken for the Health Sciences Education Building, a 286,000 square-foot building that will house the expansion of the medical school, as well as programs from the UA College of Pharmacy, the UA Mel and Enid Zuckerman College of Public Health, and Northern Arizona University’s College of Health and Human Services program. This new building will have a profound impact on the UA’s ability to educate doctors and relieve the state’s critical shortage of physicians and health care professionals. Future plans call for the construction of a new research and care facility for the Arizona Cancer Center as it expands to serve the Phoenix metropolitan area. A major economic engine for the state of Arizona, AHSC obtained almost $157 million in research grants, contracts and awards in Fiscal Year 2008.

The integrated and comprehensive nature of the UA’s health sciences programs support their shared mission of solving medical mysteries, discovering better treatments and cures for disease, and improving quality of life. Below are brief examples for each college in AHSC.

- The College of Medicine achieves its mission through important discoveries in preventing and treating asthma, diabetes, heart disease, cancer and other diseases. The College of Medicine has realized innovative discoveries such as the CardioWest Total Artificial Heart—the only one approved by the U.S. Food and Drug Administration—and the design of the first artificial wrist. Faculty and staff also have developed significant projects to increase access to high quality medical care for underserved populations throughout Arizona (see also Criteria Four and Five for more information).

- The College of Pharmacy is ranked ninth nationally in graduate education, according to the 2009 U.S. News & World Report survey. Faculty members address a wide spectrum of interests, from drug development to clinical testing to environmental issues, such as hazardous waste and public health concerns specific to the Southwest and the borderlands Arizona shares with Mexico. In these ways, the College of Pharmacy provides a high quality education while applying discoveries to improve the health of people in Arizona and beyond. Its expansion to the PBC offers the ability to serve additional students in a critically needed program.

- College of Nursing faculty and students are involved in a wide range of patient care issues and activities, including alternative health care, family caregiving and home care, cancer therapies, cardiovascular risk management, management of HIV/AIDS populations, high-risk newborns, health issues in culturally specific populations, and many other innovative approaches to health care. Expansion to the PBC is still in the planning phase.

- Mel and Enid Zuckerman College of Public Health faculty and students develop collaborative initiatives across a variety of academic and community agencies. Among the wide-ranging issues addressed are prevention and control of cancer and chronic disease; environmental and occupational health; and health issues in specific populations, including Hispanic and border health, Native American health, rural health, and the health of women, children and families. Faculty and students identify ways to improve the delivery of, and access to, high quality health-related activities. The college’s expansion to the PBC increases its ability to serve students and Arizonans in areas of critical need.

Core Component 1a: Summary

Despite wording variation over time, the core mission of the University of Arizona—providing access, quality education and discovery to the people of Arizona and beyond—has consistently guided the university. Discovery within and across disciplines is a clear focus of instruc-
tion, research and outreach. The four colleges in the Arizona Health Sciences Center illustrate the ways in which the activities of faculty and students articulate the mission of the university. The specific wording in mission statements is important to understanding the university's capacity to fulfill its mission and its integrity in engaging with its constituents on campus and beyond. Even more important are the activities that reflect a clear commitment to the university's mission.

CORE COMPONENT 1B:
In its mission documents, the organization recognizes the diversity of its learners, other constituencies, and the greater society it serves.

The University of Arizona has a deep commitment to improving and celebrating the diversity of students, faculty, staff and administrators, as well as insuring intellectual diversity and an education that values diversity. Mission statements, included in both About the University and in the UA Five Year Strategic Plan 2010-2014, emphasize the need to address societal challenges and to meet the needs of the state. The Strategic Plan notes the importance of student diversity and the commitment to supporting the needs of students from diverse backgrounds. The University Handbook for Appointed Personnel clearly states that diversity and inclusion are core values. The university’s focus on access highlights the importance of a broad perspective on diversity to include financial, geographic and physical access as well as gender, ethnic and racial access to the institution and all that it provides.

In addition, the university’s focus on diversity and access is embedded in its documents and actions. Over the past decade a wide range of activities aimed at improving student and faculty diversity have been documented and reveal that diversity is taken seriously at the UA, which embraces a more inclusive definition of diversity than many other institutions. President Shelton and Provost Hay established the 2010 Strategic Priorities Faculty Initiative, important to the way the university defines diversity in its documents:

The UA’s students represent a diverse range of human experience with respect to approaches and perspectives that stem from differences in culture, personal attributes, social group membership, and circumstance. Such differences also include race, ethnicity, socioeconomic backgrounds, geographic location, gender identity, sexual orientation, disability, language, national origin, religion, and age.

In 2009, the Diversity Resources Office was given higher status as the new Office of the Special Advisor to the President for Diversity and Inclusion. The office is a direct channel for incorporating diversity concerns into a series of university initiatives discussed below. It is also strong evidence that both the President and the Provost highly value, and take direct responsibility for, diversity at the UA.

Diversity efforts are evidenced by the many proactive steps being taken across the university to address and increase diversity among students, faculty and staff and to provide resources for cultural competencies. Some members of the community perceive a low visibility of diversity efforts because the word itself is not central to some key institutional documents. Diversity efforts are infused throughout the work of the University of Arizona.

Attention to Diversity in Curriculum
Recognizing the importance of providing students with access to an education that prepares them as lifelong learners in a diverse world, the UA General Education requirements have long required students to take courses that focus on cultural diversity (see also Criterion Three). The UA has developed a number of important undergraduate and graduate academic programs aimed at promoting diversity. Prominent examples include American Indian Studies, College of Law programs in Indigenous Peoples Law and Policy, the Department of Mexican American and Raza Studies, the Department of Gender and
Chapter 2: Criterion One

Women’s Studies, and the Institute for Lesbian, Gay, Bisexual and Transgender Studies.

The Disability Resources Center also provides information for instructors about designing curricula to be more responsive to the experiences of all students. The 2010-2014 Strategic Plan insists on providing an educational experience that supports “our diverse students, faculty, staff, and guests,” by designing “courses, programs, and facilities that are accessible to as many people as possible.”

Inclusion and Success of Students from Diverse Backgrounds

The UA has recently begun to see the benefits of several decades of work to improve diversity among students and to help more of them succeed. At the undergraduate level, the percentage of resident freshmen who are minority increased from 29.3 percent in 2000 to 41.1 percent in 2009. At the graduate level, from 2004 through 2008, the university ranked third nationally in the awarding of doctorates to Native American students and eighth for Hispanics.

In 2009, Hispanic Business ranked the College of Medicine ninth in the country for serving Hispanic students. The rankings are based on numbers of students, services available, student retention rates, and other key indicators. The Graduate College has a number of successful programs to promote the recruitment and success of graduate students of diverse backgrounds. For example, the college’s Summer Research Opportunity Program pairs undergraduate students with faculty to conduct intensive research over 10 weeks. The program serves about 80 students, most of whom come from minority backgrounds and many of whom are Mexican nationals. The gains seen in the last decade in overall student diversity are likely the result of the programs of the Graduate College and the Office of Student Affairs.

The UA began a major transformation of diversity offices and efforts related to recruiting and retaining students in Spring 2009 (see also Criterion Three). It is hoped, yet debated publicly, that the reorganization of the Office of Multicultural Affairs and Student Success to integrate it within the structure of the Vice President for Student Affairs will result in more access, inclusion, and success for students.

In 2008, the university began Arizona Assurance, which invests in the future of the state by insuring that qualified students have access to the UA. Access means sufficient financial support and academic and personal development resources to promote student success (see also Criterion Three).

Increasing Faculty Diversity

A number of documents created over the last decade guide progress toward achieving greater diversity, particularly in the area of faculty and administration. The Dean’s Diversity Plan, spearheaded by the College of Humanities, and the Diversity Action Plan (DAP) were both created in 2002. The DAP set a tone for future administrative initiatives, framing key principles by which the university now operates:

- Diversity must become a primary measure of quality and excellence.
- Diversity is essential for student success.
- The promotion of diversity has both ethical and practical implications.
- Diversity benefits everyone.

“During my sophomore year, I was invited to attend President Shelton’s annual trip to our nation’s capital. I represented the Assurance program to personally vouch for its effectiveness and how it specifically has altered my life and opportunities. How Arizona Assurance has helped me is indescribable upon paper and ink, but how it helped me will appear before the world the moment I receive my diploma. As a first generation college student, for my family, and for myself, there’s nothing better than that alone.”

Elisa, Arizona Assurance Scholar

Graduate student, Ms. Goldtooth-Begay, will return to the Navajo Nation and work toward increasing access to healthcare by changing public health policies after completing her master of public health degree. [Photo by Margaret Hartshorn, AHSC Biomedical Communications]
Chapter 2: Criterion One

Responsibility for improving diversity at the university belongs to every member of the university community.

The plan also made the powerful statement that accountability must be put in place throughout the university in order for diversity measures to be effective. The accountability system set in place by former President Likins and former Provost Davis continues today; deans, vice presidents and other administrators are evaluated annually based upon progress toward diversity goals. The DAP was an emphatic statement to the campus community and the public that improving diversity on campus is an institutional commitment. The plan itself is an extraordinarily comprehensive and detailed document. It serves as an important guide, but is difficult to implement because of the high level of detail.

Recruiting and retaining a diverse faculty has long been a major goal of the UA community. Despite tremendous efforts, there is more work to be done. Former President Likins made diversity a key component of his leadership. Demonstrating his commitment by donating funds to establish awards for faculty and staff who promote and support diversity. Likins oversaw the Millennium Project with a stated aim of increasing diversity to enhance academic excellence. He also worked with a number of campus groups to promote inclusion and success among faculty, classified staff and appointed personnel.

In 2000, the College of Medicine initiated the GRACE Project—Generating Respect for All in a Climate of Academic Excellence—to analyze whether women in the college were treated equitably. The data showed statistically significant gender differences in faculty salaries, ranks, tenure tracks, leadership positions, resources, and perceptions of academic climate. On average, the study found that women earned $12,777, or 11 percent, less than men after adjusting for rank, track, degree, specialty, years in rank, and administrative positions. Substantial gender differences in the rewards and opportunities of academic medicine remain that cannot be attributed to differences in productivity or commitment between women and men. As a result of the report, the college developed a system to annually review salaries and make adjustments where necessary. The GRACE Project was recognized with a national Progress in Equity award from the Legal Advocacy Fund of the American Association of University Women.

Following these various studies, a group of faculty and administrators from across campus wrote a proposal to the National Science Foundation ADVANCE Program for Institutional Transformation. As mentioned in the Introduction, in 2006 the UA received a five-year, $3.3 million grant to develop UA ADVANCE.

The program launched activities that target both women faculty and university leaders who make decisions that affect the careers of women faculty, their access to resources and their success. Two of the most successful activities focus on changing the culture of decision making in academic settings. According to program evalua-
tion, a presentation to search committees on how unconscious bias may influence the decisions around hiring practices successfully changed conversations in departments, encouraging faculty to consider where and how unconscious bias may affect their choices. The presentation has been licensed to the Association of American Medical Colleges and turned into an online tutorial for use around the country. Workshops that combine presentations about research on mentoring, department climate, and evaluation, with practical suggestions for best practices, were evaluated as shifting the orientation of the conversations about these topics at the department level.

This program is a first major step toward changing decision-making at the department level. As mentioned above, President Shelton and Provost Hay have continued the emphasis on diversity. They announced in 2010 a Strategic Priorities Faculty Initiative to hire faculty who advance diversity priorities and who provide the university’s diverse student body with access to a research-based education. This will be accomplished in part through appointments of faculty with experience and potential for advancing the student experience in diversity and culture.

Focused initiatives and documents framing the university’s emphasis on diversity are essential to achieving this aspect of the UA mission. The data below show that the university has achieved important success in changing the composition of its student body. In recognition of the need for achieving increased diversity within the faculty ranks, President Shelton and Provost Hay are in the process of reinvigorating activities to promote diversity. In addition to the faculty hiring initiative, the President and Provost have created an Academic Leadership Institute to provide faculty and staff with opportunities to develop their leadership skills through a yearlong program of workshops and retreats. The program was organized to prepare faculty and staff, particularly those from under-represented backgrounds, to advance through leadership positions in the university. Twenty-four faculty and staff from across the university will take part in the Institute in Fall 2010. In addition, UA ADVANCE, in collaboration with Human Resources, is conducting faculty exit surveys to assess why faculty leave the university, with a focus on department working conditions.

President Shelton and Provost Hay will institute a new task force on faculty diversity in Fall 2010. Among other issues, the full effects of Arizona’s Senate Bill 1070 on the UA have yet to be realized or well understood. The task force will be charged with identifying agenda items for the university to work on over the next few years.

Data Analysis of Diversity from 1998 to 2008

Student Populations

Over the past 10 years, the UA student population has become more diverse and more successful in achieving graduation. Minority students have increased as a percentage of the total student body and each ethnic group has
Chapter 2: Criterion One

Figure 1. Minority Student Enrollment 1998-2009

Figure 2. Total Enrollment of Minority Students

increased in number (see Figure 1). This success is a result of many new programs developed through Admissions and Student Affairs and aimed at recruiting and retaining students, as well as other programs through the Graduate College aimed at increasing student success and promotion to graduate school (see also Criterion Three). The patterns of student enrollment by gender have remained relatively stable during this 10-year period and are reflective of national trends, with slightly more women enrolling than men.

Student enrollment data by race and ethnicity show that the undergraduate student body has become more diverse with progress in the
representation of Hispanic and Asian/Pacific American undergraduates enrolled (see Figure 2 and 3). Enrollment of minority students who are first-time freshmen has seen a dramatic increase (see Figure 4). Much of this is attributed to the development of the Arizona Assurance program initiated by President Shelton.

Data on bachelor’s degrees shows tremendous improvement in the number of degrees awarded to the same two groups (see Table 1), and these data show substantial success with students from Black, American Indian, Asian/Pacific American, and Hispanic backgrounds. There is a concomitant increase in graduate degrees awarded as well, with a steady increase in master’s degrees awarded to students of Hispanic backgrounds (see Table 1). The UA is among the top institutions in the country with respect to doctoral degrees awarded to Native American
Table 1. Degrees Awarded to Minority Students, by Absolute Number and Percentage

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Source: OIRPS

Karen Francis-Begay, Special Advisor to the President, Native American Affairs

and Hispanic students. The university remains committed to improving further recruitment and retention of all students.

Diversity Among Administrators and Faculty

The university has achieved some improvement in the diversity of its faculty, but additional improvement is needed. While the number of female academic administrators has risen over the past 10 years (see Figure 5), the data on academic administrators demonstrate insignificant gains in individuals from underrepresented groups in the area of academic administration.
Figure 5. Administrators by Gender

Because the overall numbers of administrators from underrepresented groups is relatively small, even the change of one person from an administrative position significantly shifts the percentages.

Diversity data on faculty show mixed success, suggesting some stagnation in the proportion of faculty from underrepresented ethnic groups during this 10-year period. There has been a slow increase in the number of women faculty across all departments between 1998 and 2008 and relatively little change in the representation of minority faculty (see Figures 7 and 8).

The overall picture of faculty diversity suggests that the university needs to intensify its efforts to recruit and retain a diverse faculty, but there are some colleges that appear to be doing better than others. The colleges of Humanities, Management, Science and Medicine, for example, have increased their numbers of minority faculty members (displayed as percentages in Figure 9) during this period of time and the College of Social and Behavioral Sciences has shown a steady increase.

Core Component 1b: Summary

University documents directly and indirectly address the intention to incorporate diversity at all levels and in all programs. Through an extensive series of initiatives, the university’s leadership has taken courageous and important steps to
enhance the experience of and to open access at the UA for faculty and students, especially in the creation of the Arizona Assurance program. The new faculty hiring initiative and the reorganization of student services show the university is affirming its institutional commitment to achieving greater diversity and insuring access and success for its diverse community. The limited growth in faculty ethnic and racial diversity found in the institutional data suggests that new measures to promote diversity are necessary for the UA to achieve and sustain a diverse community. Even with progress in student diversity, the UA intends to continue working toward providing access to a quality experience for all its constituents.

**CORE COMPONENT 1C:**
Understanding of, and support for, the mission pervade the organization.

The university’s mission, vision, values, and goals are communicated broadly across campus. Publicity efforts involving the mission and the strategic plan include brochures, catalogs, newsletters, websites and other documents prepared by vary-
ing constituencies, many of which state their own missions and visions as well as the university’s. More importantly, understanding and support for the mission is pervasive and is reflected in the outcomes of the various colleges and departments as documented in their individual strategic plans (for example, see the planning documents and mission of the College of Agriculture and Life Sciences18 and individual mission statements (for example, the Department of Electrical and Computer Engineering19).

New staff orientations consistently address the mission. The President’s website home page contains the strategic plan, and local media reinforce data that show that the UA is among
the top 20 public research universities in the United States.

The language in the documents from some colleges and departments is not always identical to the language used in current UA mission documents. Rather than a dilution of clarity of the mission, the difference in language reflects an incorporation of the mission as translated through the lens of the individual unit.

The university’s mission, vision, values, and goals have been shared with and approved by the Arizona Board of Regents as well as the Governor’s Office of Strategic Planning and Budgeting. The President and Provost express administrative support for the plan and for diversity in a number of ways:

- Directions for preparing college strategic plans specify that deans should address the UA strategic plan and diversity goals and demonstrate how the activities of the colleges will advance the UA plan and goals. The 2009-13 college strategic plans submitted by the colleges in August 2008, address these issues. Colleges must address how they perform against the university’s strategic plan and how they advance institutional diversity goals. Deans are evaluated, both annually and in five-year reviews, on progress toward the strategic plan and diversity values.

- President Shelton meets regularly with six community advisory boards to directly gather information, to develop activities related to the needs and priorities of the UA’s diverse communities, and to ensure that this is an inclusive and equitable university.

- The Athletic Department is successful at its efforts to bring gender equity to college sports (see 2006-2007 Division I Athletics Certification Self-Study).

- With regard to hiring, the campus has a “Guide to Successful Searches” that addresses ways to diversify applicant pools.

- The university’s Special Assistant to the President for Inclusion and Diversity maintains a website that organizes in one place information, documents and policies about diversity.

Communications about the university’s fulfillment of its mission, particularly with regard to diversity, are frequent and widespread. The UANow e-newsletter is sent to 130,000 people every day. Along with 35,000 friends on Facebook and 5,000 on Twitter, news about enactment of the mission is sent to approximately 170,000 people every day. The university also is improving its communication, as these modes engaged only about 60,000 people a year ago. These messages are about faculty, students and staff; research and creative activity; engagement and outreach; and instructional activities—and they provide strong evidence of the university’s focus on its mission.

Core Component 1c: Summary

There are many venues through which the members of the campus community and other constituents learn about the basic elements of the UA mission, vision, values, strategic plan, and diversity goals, as well as a number of administrative directives and follow-ups with deans to improve college-level accountability for progress on the Strategic Plan and diversity goals. These increase awareness and accountability among administrative personnel.

CORE COMPONENT 1D:

The organization’s governance and administrative structures promote effective leadership and support collaborative processes that enable the organization to fulfill its mission.

The University of Arizona has a dynamic governance and administrative structure, from the unit level to statewide. The university prides itself on its broad-based and well-accepted shared governance framework, which encourages staff,
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faculty, students, and the larger community to participate in university activities. Each member of the university community has the opportunity to engage collaboratively within this administrative structure around important issues such as academic policies, curriculum, and financial management. The governance and administrative structure, discussed below, is continually updated in response to changing needs and provides a valuable infrastructure for communication and collaboration.

The Arizona Board of Regents (ABOR) is the body with jurisdiction over the three state universities in Arizona. It is comprised of 12 members: eight governor-appointed Regents who serve eight-year terms, two student regents who serve two-year terms, and the governor and superintendent of public instruction as ex-officio members who serve while they hold office.

At the University of Arizona, central administration is comprised primarily of two teams: the President’s Cabinet and the Provost’s Senior Leadership Team. The Cabinet has seen some turnover in personnel since President Shelton’s arrival in 2006, but the administrative units represented in his Cabinet have remained relatively stable. The Provost’s Senior Leadership Team has seen changes, both in terms of structure and personnel, since Provost Hay took office in May 2008. The position of Vice President for Instruction has been eliminated, and that portfolio now resides with the Vice Provost for Academic Affairs. An Assistant Vice Provost for Instruction and Assessment was recently appointed as well. The Vice President for Outreach has been replaced by a new individual with the title of Vice Provost for Outreach and Global Initiatives.

Negotiations on a Shared Governance Memorandum of Understanding began in 1996 between then President Manuel Pacheco and the faculty chair. The document was ratified and signed by the President, the Provost, and the chair and vice chair of the faculty in 1997. In 2005, the document was modified to clarify language related to confidentiality, particularly with regard to matters in which policy might overlap with personnel issues. The revised document also makes explicit that private consultation with shared governance leadership is appropriate in situations where time pressures or confidentiality issues may affect the decision. Each successive president, provost, faculty chair, and vice-chair has signed this agreement.

Central governance structures at the university are designed to address budget and four main policy areas: personnel, curriculum, research, and student affairs. The Faculty Senate has a wide-ranging structure to manage input into these areas. Faculty Senate leadership consistently works with the university administration to achieve shared goals. For example, in 2009, the Faculty Senate streamlined the curriculum approval process to remove redundant layers of bureaucracy, thus shortening the time required for implementing changes in curriculum. Below is a discussion of the key aspects of shared governance.

In keeping with its historic land-grant mission, the University of Arizona serves as an engine of development and a source of inspiration that enriches individual lives and advances the collective well being of our society. Across every discipline, and on a daily basis, the university works to improve the human condition for the people of Arizona.

From the University of Arizona 2011-2015 Strategic Plan

The Strategic Planning and Budget Advisory Committee (SPBAC) is a university-wide, shared governance committee, with membership representing administration, faculty, staff, appointed professionals, undergraduate students, and graduate students. Its mission states:

In consultation and dialogue with the President, the Provost, and the University community, the Strategic Planning and Budget Advisory Committee (SPBAC) supports and enhances the success of the University through thoughtful and informed advice relating to: strategic planning, assessment of institutional priorities, review of budgetary
Faculty Constitution\textsuperscript{31} and Bylaws\textsuperscript{32} document faculty rights, privileges, and responsibilities. Changes in these documents are approved by a vote of the general faculty after being negotiated between the Faculty Senate and the President.

The Faculty Senate is charged with participating, in partnership with the administration, in setting university policies related to curriculum, academic personnel, research, and student affairs. To provide broad participation and representation, 29 Senate seats are apportioned to colleges, with an additional 10 seats elected at-large. Ex-officio members include the President and Provost as well as a dean, the chair of SPBAC, and the chairs of some of the key curricular committees. All members are expected to attend the monthly meetings and to be available to serve on standing and ad-hoc committees. Voting faculty include multi-year lecturers, emeritus faculty, and tenure-eligible and continuing-eligible faculty. In the past, turnout in these elections has rarely exceeded 10 percent of eligible voters. The Spring 2010 election saw a nearly 17-percent turnout of eligible voters. The turnout increased to 23 percent when excluding those with emeritus status. This shows an increase in the engagement of faculty in shared governance from past elections.

All Faculty Senate standing committees\textsuperscript{33} include undergraduate and graduate student members. Two large groups, classified staff and appointed personnel, have observer status without voting privileges. These groups have their own representative bodies, described below.

The Committee of Eleven is an elected faculty body that initiates, promotes and stimulates study and action dealing with and resolving situations and problems of interest and concern to the faculty and the university. The group often takes up university-wide concerns to promote change. A recent example of its effectiveness is the development of a white paper on student retention, which in 2008 led to the Faculty Senate appointing a task force that produced a report that is currently being implemented (see also Criterion Three).

The University of Arizona Staff Advisory Council (SAC)\textsuperscript{34} exists to foster and enhance communications between classified staff and the university community, to provide a forum for discussing and defining staff’s role in the university, to represent and advocate staff concerns within the university and statewide, to serve as a resource for inquiries and requests, to advise and make recommendations on existing and proposed university policies and procedures, and to ensure classified staff are included on university committees.

Appointed Professionals Advisory Council (APAC)\textsuperscript{35} represents all professional employees at the University of Arizona as defined by the University Handbook for Appointed Personnel and the Arizona Board of Regents Policy Manual. APAC advises the administration and other UA organizations on matters of concern to the university community in accord with Appointed Professionals’ specific conditions of employment and roles at UA.

The established structures for university-level governance incorporate representation from multiple constituencies—faculty, staff, undergraduate and graduate students, and appointed professionals. Governance structures at the college and department levels vary significantly in the degree to which they involve non-faculty administrators in decision-making processes. For example, the College of Humanities has a Dean’s Advisory Committee with elected membership across college faculty, staff, and students, while the College of Science has a Staff Advisory Council that advises the dean on concerns of staff and appointed personnel.

Associated Students of the University of Arizona (ASUA)\textsuperscript{36} is the organization charged with representing the undergraduate student body. ASUA offers a wide variety of programs and services.
that students can help organize and utilize. Importantly, ASUA provides the UA administration, Regents, and Legislature with information about student concerns. The 2009-2010 student body president gave the first ever State of the Student address in April 2010. ASUA also raises funds for scholarships and manages nearly 500 clubs and organizations on campus. All students are urged to get involved with the student government.

Graduate and Professional Student Council (GPSC) was created to communicate the concerns and advance the causes of graduate students, to create and foster programs for growth and interaction, to disburse funds for professional development, and to be a voice for graduate and professional students at the university, central administration, and state levels. This goal is achieved through the election of representatives, officers and administrative staff. GPSC’s initiatives over the past decade have included health benefits, childcare, improved ways of recognizing teaching and mentoring excellence, and a graduate student Bill of Rights.

**Shared Governance: Strengths and Opportunities**

Shared governance at the college and unit levels has been a topic of active and productive discussion for more than a decade. In 1998, the Faculty Senate passed the Plan for Extending Shared Governance to extend shared governance into colleges and departments. In 2003, the Shared Governance Review Committee surveyed the state of shared governance in the colleges on the UA main campus. The Committee found that commitment to, and interest in, shared governance principles varied widely from college to college, with strong faculty participation in some areas, and weak to non-existent participation in others. The Committee generated a “Best Practices” document summarizing their findings on the best approaches to implement shared governance at the college level. The Provost charged each dean with creating and utilizing shared governance when developing key policies and implementing plans such as salary equity, key personnel salary increases and budget adjustments.

The UA has a system of shared governance that is considered strongest at the central level, where it addresses issues related to the university budget, faculty and curricular matters, research and personnel. The Faculty Senate structure is replicated to a certain degree at the student level where there is also a strong tradition of shared government. Over the past two decades, there has been concerted effort to revise and make more inclusive these structures by implementing the best practices approach at the college and unit levels.

The university has strong traditions of shared governance and decentralized decision-making. The opportunity exists for developing and effectively using communication mechanisms that allow for timely, two-way flows of information. The university needs to remain agile in, and seek meaningful input into, its decision-making.

A number of communication channels facilitate the flow of information from central offices in particular. The robust structure of on-campus constituent groups uses these mechanisms and others to disseminate information. Faculty officers and the President have listservs that reach most, if not all, faculty. There are “3-D Memos” to deans, directors, and department heads, as well as the daily UANow e-bulletin, mentioned earlier in this chapter. UANow disseminates news and information to about 130,000 people daily.

The university community is not immune from information overload fostered by advances in information technology and the growing number of communication modes and channels. For example, when central administration realized that its detailed e-mail communications concerning the progress of the recent Transformation initiative were not universally viewed as effective, the provost personally met with each college’s faculty to clarify plans and address concerns.

**Core Component 1d: Summary**

Over the past 20 years, the UA has developed a strong tradition of shared governance and an
extensive structure to support it. The greatest opportunities are related to maintaining broad participation and engagement in that structure, particularly during these difficult budgetary times. Current leadership is committed to maintaining an environment of collaborative decision-making. The greatest challenge is to maintain effective two-way communication.

CORE COMPONENT 1E:
The organization upholds and protects its integrity.

While the mission of the university describes what it does, the policies that address integrity insure those things are done well and for the benefit of students, the entire university and its stakeholders. In the past decade, the UA has developed new mechanisms within existing offices and created new offices to address matters related to ethics in the classroom, lab and office. These mechanisms include the Ombuds Program; the offices of the Associate and Assistant Deans of Students for undergraduate, graduate and professional students; the Research Integrity Officer, and programs such as the Resident Assistant program in on-campus housing units.

Historically, the approach to misconduct tended to be reactive, dealing with issues once they arose. Over the last 10 years there has been a major shift to a more proactive approach, with the focus on education and awareness of responsible conduct in all aspects of university life.

Proactive Approach to Conduct with Integrity

The proactive approach has been assimilated in many ways across campus, and in several units it has been common for many years. The university as a whole, and many individual units, have taken some or all of the following steps:

- Clarified or developed policies to address integrity
- Established vehicles for education and awareness
- Increased access to assistance and conflict resolution
- Provided assessment and feedback for continued evolution

Professional Conduct

The Faculty Senate adopted a Statement on Professional Conduct to address interactions with faculty members and administrative and professional personnel. This statement lays out expectations about respectful professional interaction and honest academic conduct. The university has established a series of policies and awareness programs to insure the professional conduct of faculty, students and staff.

Respectful Behavior in the Workplace: Policies and Awareness

In keeping with the proactive approach to integrity, the Office of Institutional Equity has established a number of ways to educate the campus community about discrimination and harassment and about policies that insure a safe workplace. In July 2007, the office created an Ethics and Compliance Hotline through which community members can anonymously report concerns about activities such as hate crimes and abuse. In August 2009, the office instituted an annual e-mail to students with information about discrimination, harassment, retaliation and campus resources, and it began distributing a poster designed to engage students in a better understanding of these issues. In August 2010, the office disseminated materials geared toward graduate students on how such concerns can affect them in their work as graduate teaching assistants.

Code of Academic Integrity: Policies

The university encourages incorporating the Code of Academic Integrity into each course syllabus and/or discussing it at the beginning of each semester. This has had a very positive effect on increasing student awareness of integrity and reducing unethical behavior. A discussion of the code’s content led to a revision of wording approved by the Faculty Senate in February 2009.
highlighting the importance of a code of conduct while making the issues more easily understood.

**Academic Freedom: Policy and Awareness**

The Faculty Senate also approved a new definition of Academic Freedom in September 2009. In 2007, the Committee on Academic Freedom and Tenure (CAFT) recommended that the university adopt a definition of academic freedom. The committee felt it would be beneficial to have something in writing when grievances come forward to the Grievance Clearinghouse Committee and CAFT, since many faculty grievances allege violation of academic freedom.

**Responsible Conduct of Research: Policy and Awareness**

A proactive approach of broad education and awareness about the responsible conduct of research has been a welcome and effective change and has resulted in a restructuring of the university’s research support offices. Until the early part of this decade, multiple units oversaw investigator compliance with requirements regarding human subjects, animal subjects, radiation safety, and other risk factors. This system, while insuring compliance with research standards, was cumbersome and sometimes duplicative. In 2007-2008, the Office for Responsible Conduct of Research (ORCR) was created within the Office of the Vice President for Research, bringing together oversight and reporting units related to research compliance. The university’s response to concerns led to the development of an integrated approach that is credited with more effective interactions with research faculty, students and staff; more relevant oversight for research proceedings; and more robust assistance in developing compliant research protocols.

**Programming to Promote Integrity in Research Endeavors**

The UA has in place a series of new efforts to bring researchers of all ranks together to improve research integrity mechanisms. The ORCR, in collaboration with the Graduate College, has established a campus-wide education program that includes an annual day of seminars and workshops on responsible conduct of research, and a small grants program for developing vehicles to increase awareness for specific issues in courses, departments, colleges and disciplines (Small Grants Program in Research Integrity). The Dean of Students office also has appointed a graduate assistant for Integrity and Ethics. This position provides students and faculty with education around issues of academic integrity. Among other things, the position coordinates and teaches the Academic Integrity Workshop for identified plagiarism offenders. An electronic tutorial covering the general topic of intellectual integrity makes implementation available for wider access, helping to overcome the issue of anonymity and 24 hour access. Nearly universal access to the web-based turnitin.com tool, which identifies work that has been plagiarized, has increased the number of identified plagiarism cases, but reduced the overall incidence of plagiarism as a percent of total code violations. This fall turnitin.com access will be available directly through the course management system, D2L. Plagiarism accounts for nearly two-thirds of all cases of code violations.

A number of colleges also have developed programs to take a proactive stance at promoting ethical behavior. Several means have proven effective with undergraduate students. For example, the Eller College Annual Ethics Case Competition, now in its seventh year, brings teams of business students together from across North America to focus on the importance of ethical decision-making in business, research and critical evaluation. The Task Force on Individual Studies was created to address the issues of regulation, policies, availability and oversight in areas such as preceptorships and independent studies, among others. Though the catalyst was a very local and confined problem, the resulting discussion among Task Force members—including faculty, students, advisors and administration—led to guidelines for the use of the Individual Studies credit bearing offerings across the university.
Proactive responses to issues of integrity have occurred at the graduate level as well. For example, the College of Medicine runs the Medical Ethics Lunchtime Forum for first and second year students to provide a vehicle for discussing ethical issues in the training and practice of medicine. Elsewhere, there has been a proliferation of courses across campus to address issues of integrity both within and across disciplines. They include Scientific Writing Strategies and Ethics; Survival Skills and Ethics; Ethics for Library and Information Professionals; and Science, Society and Ethics.

Core Component 1e: Summary

The shift from reactive to proactive approaches to issues of integrity and potential misconduct has resulted in more educational opportunities and awareness, while increasing focus on the responsible conduct of research. The more proactive stance toward preventing discriminatory or harassing behavior also has steered the university community toward prevention. These shifts have made multiple vehicles for addressing issues available to all constituencies before problems arise. Many individual units and colleges are actively addressing these practices by undertaking discipline-specific approaches to increase awareness.

BRIDGING TO THE FUTURE: MISSION AND INTEGRITY

Since the 2000 Self Study, the University of Arizona has taken major steps toward enhanced fulfillment of its mission and stronger assurance of the integrity of its programs and interactions on behalf of all of its constituents. In the Fall of 2010, as a direct result of the current self-study process, the President and Provost charged a task force, Achieving Faculty Diversity, with identifying effective mechanisms to fully implement the goals below.

To bridge to the future in ways consistent with its mission and vision for integrity, the UA will:

- **Communicate** its mission more clearly across many constituencies
- **Continue to work to achieve increased diversity**, especially among faculty
- **Create governance structures** across the university to promote even more effective decision-making
- **Enhance communication of integrity** as a core value.

"Wildcat Family" sculpture at the Alumni Plaza on the UA Mall.

Saguaro blooms and an Arizona sky [Photo by Randall Richardson]
CHAPTER 2 – CRITERION ONE: ENDNOTES

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2. http://ahsc.arizona.edu/about_us
3. http://wwwpresident.arizona.edu/about
4. http://plan.web.arizona.edu/
5. http://facultyaffairs.arizona.edu/recruitment
10. http://www.assurance.arizona.edu/
12. http://www.u.arizona.edu/~millen/
14. http://www.advance.arizona.edu/about.cfm
18. http://cals.arizona.edu/dean/planning/
24. http://www.arizona.edu/diversity/community_advisory_councils
26. http://www.hr.arizona.edu/01_rec/searches/searchguide.php
27 http://www.arizona.edu/diversity
28 http://facultygovernance.arizona.edu/sites/default/files/Faculty_Bylaws.pdf
29 http://fp.arizona.edu/senate/
30 http://spbac.web.arizona.edu/
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33 http://fp.arizona.edu/senate/
34 http://fp.arizona.edu/SAC/
35 http://apac.arizona.edu/
36 http://www.asua.arizona.edu/
37 http://www.gpsc.arizona.edu/
38 http://facultygovernance.arizona.edu/sites/default/files/Plan%20to%20Extend%20Shared%20Governance.pdf
40 http://uhap.web.arizona.edu/chap7.html#7.01
41 http://equity.arizona.edu/
42 http://deanofstudents.arizona.edu/codeofacademicintegrity
43 http://facultygovernance.arizona.edu/sites/default/files/definition-academic-freedom-9-14-09.pdf
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Chapter 3: Preparing for the Future
(Criterion Two)
CHAPTER 3

Criterion Two: Preparing for the Future

The organization’s allocation of resources and its processes for evaluation and planning demonstrate its capacity to fulfill its mission, improve the quality of its education, and respond to future challenges and opportunities.

INTRODUCTION

The Arizona Board of Regents envisions a state university system with a mission to “increase the educational attainment of Arizona citizens, to increase the prominence of the system’s research enterprise, and to provide an educated workforce” a system that, by 2020, will be “nationally recognized for excellence in academic and research pursuits that support and stimulate a growing, vibrant economy and a high quality of life for Arizonans.”

President Shelton describes a future where “access, quality and discovery” shape the university environment. The University of Arizona’s current Five-Year Strategic Plan is based on four main goals: expanding access and enhancing educational excellence; increasing achievements in research, scholarship and creative expression; expanding community engagement and workforce impact; and improving productivity and increasing efficiencies.

While preparing to bridge to that future, the UA faces unprecedented challenges that test its ability to manage demographic, economic and environmental pressures while continuing to fulfill its mission. The university’s responses to these challenges include:

- **Managing the ongoing reductions in state legislative financial support**, which requires a dramatic restructuring of resource allocation and academic organization across the university. The UA’s state funding was cut by more than $100 million in the last three fiscal years, constituting 39.5 percent of total cuts to the state’s three-university system and proportionate to the UA’s share of state general funds apportioned to the university system.

- **Tuition and fee increases**, which have partly offset the impact of the budget cuts on the quality of instruction. Colleges and schools now have differential tuition rates set in accordance with the varying cost of educating students in particular disciplines. Tuition for all students has increased. As an example, the undergraduate tuition price has increased from $2,348 in 2000-2001 to $7,614 in 2010-2011. The average amount actually paid by in-state undergraduate students, after considering scholarships and financial aid, was $1,977 in 2009-2010.

- **Responsibility-centered management (RCM)**, which is being introduced at the UA in fiscal year 2011 as a means of preparing for the future. RCM will help ensure that the institution can fulfill its mission and become more agile in decision-making. RCM will institute a series of incentives and disincentives into the resource allocation algorithms at the college and department level to ensure that students receive the courses they need, thereby promoting higher graduation rates.

- **A plan for new distributed learning centers** to help the university prepare for future increased enrollment and expand access. The UA has several new initiatives aimed at expanding possibilities for learning in order to ensure access, quality and discovery to the largest number of constituents.

- **Faculty retention**, which has always been a university priority and continues to be an integrated planning focus across colleges and administrative areas.
Chapter 3: Criterion Two

The UA already is maintaining a fragile equilibrium between budget resources and mission fulfillment. These new pressures provide the university with an opportunity to change its financial model to better prepare for the future and fulfill its mission priorities of access, quality and discovery.

The analysis in this chapter was based on interviews with a number of representative deans and vice presidents and on small group discussions with about 70 unit heads and directors from across the university. Information from these meetings and data collected from around the university highlighted ways the UA may be able to continue to improve already strong programs and processes, while developing new mechanisms to respond to future challenges.

The UA has in place many effective mechanisms to manage the economic, demographic and technological pressures facing public universities. However, finding new ways to develop, manage and use resources is essential to fulfilling the university’s mission. Bridging to the future will require a critical examination of the ways the university plans and budgets, while looking for new challenges and opportunities at every turn. Responsibility Centered Management will require changes in budgeting and evaluation of personnel, academic programs, and other activities that receive budget allocations. Future attention to diverse intellectual perspectives, flexible instructional human resources, an engaged student body, a stable professoriate, and increasingly flexible financial resources will be critical.

CORE COMPONENT 2A:
The organization realistically prepares for a future shaped by multiple societal and economic trends.

Arizona, like many states, is experiencing a significant budget crisis, but Arizona’s is more severe than in some other states. That is largely due to the fact that over the last 10 years, Arizona and the university have experienced tremendous population growth and significant state revenue shortfalls. At the same time, the Arizona Legislature has preferred to cut spending rather than to raise taxes. The UA therefore is planning for a future with increasing student enrollment and continuing cuts in state funding, while preparing its faculty and students to thrive and contribute to society by investing in interdisciplinary and translational instruction and research.

Meeting the Needs of the State: Managing Enrollment Growth

Although the figures have recently been revised downward, state estimates suggest that the Arizona public education system will need to manage substantial enrollment growth during the coming decade. Because of the demographic structure of the state’s population, the UA expects that the growing resident population of college-age students will increase pressure on the university. The University Strategic Plan (USP) calls for a five-year increase in enrollment, from nearly 39,000 in 2010 to 44,000 in 2014. A new system architecture will grow capacity in order to maintain access and to provide a quality education for students in a variety of locations and through alternative pathways (see also Criterion Three).

An important recent development in the university’s approach to managing enrollment is the Arizona Board of Regents’ decision to allow the university to increase revenues by increasing the number of non-resident or out-of-state students to up to 40 percent of total enrollment beginning in the 2010-2011 academic year and continuing for two years. The UA’s current concern is the potential impact of recent tuition increases and the controversial new state immigration law, known as SB1070, on attracting students from out of state. Enrollment figures as of June 2010 suggest that both of these are driving down the number of non-resident students, thereby limiting potential budgetary increases from additional out-of-state tuition growth.
Expanded enrollment growth in the past decade has largely been accommodated by increasing the size of entering classes. In order to manage future growth and to maintain or expand access to the university, the UA is planning to increase its enrollment and the number of students served through several means. They include investing in lower cost curriculum delivery, expanding access to distance education, collaborating more with community colleges, and increasing the delivery sites (see also Criterion Three). This diverse set of curricular changes and options is expected to improve class availability and to manage enrollment.

Because of facility limitations on the UA Main Campus, a series of enrollment management initiatives are planned to expand access while maintaining quality educational programs. For example, the UA is in discussion with the City of Tucson to expand access to UA academic programs by growing into downtown Tucson. The UA also is in the planning stages of investing in new satellite learning sites and expanding opportunities at existing sites such as UA South, 90 miles southeast of Tucson. The University of Arizona Outreach College promotes access to the university on a global scale and helps manage enrollment by developing innovative partnerships around the state through its Pathways Program (see also Criterion Three).

While the size of the student body is increasing by design, the UA also is focusing on improving student persistence rates as well as graduation rates. The UA has steadily improved undergraduate retention and graduation rates in the last 10 to 15 years, especially for first-time, full-time freshmen (see Figure 1), a sign of improvement in the university’s undergraduate education, access, and attention to the needs of the students. Persistence and graduation rates also have improved substantially for minority students, especially the four-year graduation rate (see Figure 2).

**Figure 1. Total Undergraduate Student Retention and Graduation Rates**
To further close the gap between total undergraduate persistence and graduation rates and those for minority students, several programs are in place at the college level to augment efforts by central administration (see also Criteria One and Three). The College of Science currently has a task force charged with developing and implementing effective ways to improve persistence rates for its majors from minority backgrounds. The Colleges of Letters, Arts and Science is partnering with Student Affairs, the University of Arizona Foundation, and the Alumni Association, among other units across campus, to improve persistence and graduation rates for students in the Arizona Assurance program and plans to take the most effective programs to all students.

While the size of the undergraduate population has increased approximately 12 percent since 1990, the UA does not appear to be increasing its proportion of students matriculating with the highest levels of preparation. For example, the number of National Merit Scholars among incoming freshmen has changed little over the past 10 years, 55 students in 1998 to 76 in 2004 and to 61 students in 2008. This means that given the increased number of freshmen in recent years, the proportion of Merit Scholars has declined. However, the profile of incoming freshmen in 2009-2010 indicates that their average high school GPA and SAT and ACT scores are all higher than the class of 2008. This trend of increasing the quality and size of the incoming freshmen class is expected to continue, and the UA is committed to maintaining and expanding future access.

Meeting the Needs of the State: Facilities and Locations

The UA has been able to build a number of facilities in the last 10 years both to accommodate growth and to improve the experience of students, staff, faculty and the community. The opening of the 119,000 square-foot Integrated Learning Center (ILC) in September 2003 and the new Student Union in January 2003 have improved the quality of the experience of UA students in the classroom and beyond. The use of additional instructional delivery spaces, discussed below, help prepare the UA to move into a future in which students have access to facilities more broadly. While the UA has a small deficit in classroom space, the classroom and research laboratory deficit for research and creative activity is a much greater concern for bridging to the future (see Physical Resources Planning below).

With the initiation of the Comprehensive Campus Plan update in 2009, the UA asked numerous administrators, faculty, staff and community members to indicate their highest priorities and greatest needs related to campus growth and...
Chapter 3: Criterion Two

Chapter 3: Criterion Two

“Criterion Two development. Constituents repeatedly voiced the need to look outside Main Campus boundaries for growth and community engagement opportunities. Thus, the President and Provost strongly encouraged the Campus Plan update team to explore potential for a greater UA presence downtown and at other satellite locations.

A modern streetcar route is scheduled to link the main campus to downtown Tucson in late 2012, allowing students to live anywhere along the line and to access campus in minutes without an automobile. Given this link, the UA is considering a future where selected departments and programs are located downtown. The UA has a number of other options for growth and expansion throughout the Tucson area. The Science and Technology Park, located several miles southeast of the main campus, has grown to become a corporate home for high-tech enterprises and financial institutions that enjoy a synergistic relationship with the university and other companies.

However, while the park is quite successful in this core mission, its use as a UA expansion option remains limited due to its distance from the Main Campus. A planned collaboration between the UA and several private sector partners will create a closer facility, developing a Biomedical Research Park—complete with a hotel, housing, a possible public school and retail shops—at an unused site south of the Main Campus. Currently, the project is approved and ground has been broken.

The UA has several learning centers in the Phoenix metropolitan region. The Eller College of Management offers MBA programs in Scottsdale and the Arizona Health Sciences has academic programs at the Phoenix Biomedical Campus. The UA has a wonderful opportunity to partner with the City of Chandler, immediately southeast of Phoenix, to provide graduate courses and some upper-division undergraduate courses and to create a hub for distance education. The plans for this partnership have been evolving since spring 2009, with the goal of making distance education courses available by spring 2011.

The UA also is planning a new partnership with the City of Chandler’s Innovations Technology Incubator/Accelerator to create opportunities for students and prospective students to participate in Chandler industry projects.

UA Residence Life, along with planning, design and construction teams, will soon solicit proposals from the private sector for campus housing developments at various locations around the edges of campus and in zones along the streetcar line. With more than 1,000 new beds under construction on campus with special provisions to assure the success of first-year students, future projects may target more advanced students with apartment-style housing and less university oversight. This type of housing presents the UA with an opportunity for additional partnerships with the private sector.

Lastly, the university operates UA South in Sierra Vista, about 90 minutes southeast of Tucson, offering courses and outreach activities to rural areas of Southeast Arizona. This campus extends the university’s reach and serves a dynamic community that would otherwise have no direct access to higher education. An important part of the community served is the U.S. Army base in nearby Fort Huachuca. The university also has Cooperative Extension sites across Arizona, each offering opportunities for UA outreach. All of these locations present opportunities for future growth.

“In grade school I remember spending my afternoons at the park … awaiting the first glimpse of our parents’ faces as they stepped off that old dust covered work bus … there was always a desolate stare in my parents’ languid eyes that testified the physical abuse their bodies had withstood. The Arizona Assurance Scholars Program has been the greatest supporter fueling me on the road to success. The personal attention provided by the mentors and staff is truly astounding and has really facilitated the transition from high school.”

Juan, Arizona Assurance Scholar

Rendering of the Sixth Street Residence Hall [Courtesy of Planning, Design and Construction, and AR7 Architects]
Meeting the Needs of the State: Preparing for Economic Trends

The move toward becoming a state-assisted university rather than a state-funded one requires the UA to focus attention on how to maintain access, quality and discovery during a time of shifting resources. The single most significant economic trend for the UA is the decline in financial resources provided by the state. The UA receives an ever-declining proportion of its funding from the state and has been subject to a large number of state budget cuts and mid-year rescissions over the past 10 years (see Table 1). This has resulted in a drastic change in the way the UA is managed—change that reverberates through every administrative and academic decision.

Table 1. State General Fund Reductions

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Permanent Funds</th>
<th>One-Time Funds</th>
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<tbody>
<tr>
<td>FY02</td>
<td>$20M</td>
<td></td>
</tr>
<tr>
<td>FY03</td>
<td>$41M</td>
<td></td>
</tr>
<tr>
<td>FY08</td>
<td>$7.2M</td>
<td>$5.25</td>
</tr>
<tr>
<td>FY09</td>
<td>$68.9M</td>
<td></td>
</tr>
<tr>
<td>FY10</td>
<td>$19.7M</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$156.8M</td>
<td>$5.25</td>
</tr>
</tbody>
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Since Fiscal Year 2002, the UA has lost $156.8 million in permanent state funding to its General Fund and $5.25 million in one-time funds.

In addition, in spring 2010, the Arizona Board of Regents required that the UA reduce state personal service expenditures by 2.75 percent in fiscal year 2010-2011. The plan to meet this reduction includes a mandatory furlough program that applies to all fund sources, while generating an additional $2.5 million through non-renewals, retirements, resignations and vacancies expected to occur through the year. These state fund reductions have been the driving force in the substantial increases in tuition rates over time. In addition, since the state provides relatively little financial aid for UA students, the university’s self-generated financial aid set-asides have had to increase substantially during this time. While managing finances has been very challenging in recent years, State Fiscal Stabilization Funds (also known as stimulus funding) of $60.8 million received late in fiscal year 2009 helped to offset expenditures in fiscal years 2009 and 2010. These funds were allocated in a manner that covered one-time expenditures so as not to increase the UA’s expenditure base. The fiscal concern here is that the stimulus funds do not replace the loss of recurring state funds. An additional $28.3 million in stimulus funding was received late in fiscal year 2010 to soften what otherwise would have been a more devastating blow to the university during the current business downturn. UA faculty members have also received over $102 million in federal stimulus research funds through the American Recovery and Reinvestment Act. However, the impact of the budget crisis on individual colleges and units throughout the university has been severe.

The UA has put in place a large variety of mechanisms to prepare for moving into the future by planning in advance for both reduced state funding and increased revenues. An important aspect of how the university will learn to plan differently in this new environment is its move toward a model of responsibility-centered management (RCM) as a key means of enabling university units to manage their future finances. RCM will increase transparency to help further conversations between college deans and unit heads. In preparing for the implementation of RCM, the UA is positioned to identify its base level performance as well as identify cost pools.

The UA also recognizes that students and their families have declining financial resources that they can commit toward funding their education. In part due to the constraints experienced by the students of Arizona, President Shelton initiated the Arizona Assurance Scholars Program (see also Criteria One and Three). This program assures funding to students so they now know they have the financial resources to complete their degree at the UA.
Core Component 2a: Summary
The UA, like many other public universities, is managing a future of increased enrollment, shrinking state general fund resources, and an increasingly global environment for its students’ future. The UA will be prepared for the future by setting in place several means of delivering instruction to students with increasingly diverse needs. While Arizona has historically followed the State Constitution mandate of offering state residents low tuition, significant tuition increases are now a necessity and a component of the university’s plans for introducing responsibility-centered management.

CORE COMPONENT 2B:
The organization’s resource base supports its educational programs and its plans for maintaining and strengthening their quality in the future. The University of Arizona leadership has focused serious attention on planning for change in its revenue base to ensure that it fulfills its mission of access, quality and discovery in the new environment. This includes new decision-making algorithms for resource allocation across the institution and in the ways classes are taught. Below is a discussion of UA resource bases and concrete ways the university is planning for the future.

Figure 3. UA Total Revenue Streams

Note: Grants and Contracts include Federal Stimulus Funds of $60M for FY09 and $28M for FY10

Revenue Streams
UA central administration works closely with a university-wide shared governance committee, the Strategic Planning and Budget Advisory Committee (SPBAC), to plan revenue streams and to develop a strategic plan for allocating revenues across the university. Those revenue streams have become more complex over the past 10 years and will become more so as the UA develops new ways to expand its revenue base, which consists of appropriations from the state General Fund, as well as tuition. This funding supports core operations and infrastructure and is the foundation for generating external support from grants and contracts, endowment returns, gifts and other sources. The UA has a strong track record in leveraging state funding to increase revenue from non-state sources over the last 10 years (see Figure 3).

While the university’s revenue has grown, core state support through general funds has decreased after adjusting for inflation over the last two decades (see Figure 4). While externally generated revenue improves the university’s quality and effectiveness, the vast majority of it is restricted to research-related uses. As shown below, the historical record, current economic conditions and the political environment in Arizona make it clear that state support may continue to significantly decrease. This presents
the university with a major challenge to maintaining quality and effectiveness and meeting future goals. The UA has planned for the continued decrease in overall state funding through a large variety of means noted below.

**General Fund Support**

During 2009-10 and the preceding 10 years, UA General Fund revenue has decreased in inflation-adjusted dollars (see Figure 4). Over time, the state funding as a proportion of the General Fund have declined due to continuing budget cuts (see Figure 5). Over the same period, revenue from grants and contracts (including direct and indirect costs) has increased about 38 percent and revenue from tuition has increased about 76 percent (though it still provided only 19 percent of total revenue for fiscal year 2008-2009 and 22 percent for fiscal year 2009-2010). Revenue from gifts and endowments has increased substantially, especially in the last three to seven years. The General Fund is the main source of generally unrestricted funds, providing for general operating costs, salaries and infrastructure.

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**Figure 4. UA Total Revenues and General Fund, Constant Dollars, 1986-2010**

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**Figure 5. State Appropriation as Percent of Total State Funds**
As shown in Figure 6, the University’s General Fund has shrunk from 45 percent to 25 percent in the last two decades, presenting a challenge to future goals.

“To increase the research capabilities and performance of the Arizona University System to a level of competitive prominence with peer rankings of top American research universities.”

Arizona Board of Regents 2020 Plan Goal Two RESEARCH EXCELLENCE

**Figure 6. Revenue in Three Fiscal Years, Spanning Two Decades**

![Pie charts showing revenue distribution from 1986-87 to 2008-09](image)

Note: the declining proportion of General Fund support (violet-colored slice in northeast quadrants of pies). Data from the UA Budget Office.

### Technology and Research Initiative Fund

Although state support has not increased in real terms, the Technology and Research Initiative Fund (TRIF), a special investment in higher education made possible by the passage of Proposition 301 by Arizona voters in 2000, has been an important source of state funds for new initiatives (see also Criterion Four). The TRIF portion of the proceeds from six-tenths of a cent increase in state sales tax are administered by the Arizona Board of Regents and given to the state’s public universities. At the UA, TRIF funds support creative efforts in critical high-technology areas, translation of research results to clinical or commercial application, important environmental research in water resources and policy, and education of a workforce prepared for the knowledge-based economy of the 21st Century. Funds also support specialized research facilities, enhancement of technology transfer, and distance-learning activities.

Although increased revenue from non-state sources benefits the university, these revenue streams present challenges because they are generally restricted to certain uses. The impact of these funds cannot be denied—the return on investment has increased from a factor of 2.0 in fiscal year 2002 to 7.8 in fiscal year 2009. The expansion of programs related to water resources is an excellent example of how TRIF has contributed to both planning and developing the resources for innovative, collaborative, interdisciplinary programming. The UA has developed broad-based and innovative instructional, research, and outreach programs that would not have been possible without TRIF.

### Tuition and Fees Support

Tuition and student fees are important sources of revenue for the UA. Tuition is the more flexible of the two sources of revenue, yet the university sets criteria for how new tuition funds are used. Tuition and fees comprised 22 percent of the university’s revenue base in Fiscal Year 2010; because of declining state support, the UA recognizes the unfortunate need to increase tuition and fees as one way of planning for revenue shortfalls. Through the UA Transformation process that started in 2008 (See Core Component 2d for more information), a number of academic programs have begun to charge differential tuition and other program fees to provide a new source of support. The uses of these differential tuition funds are restricted to directly benefit students and to provide needed financial aid.
In addition to increased differential tuition and fees, the UA also recognizes the need to increase overall tuition rates. ABOR approved a dramatic increase in tuition and fees for students beginning in the 2010-2011 academic year. The new rates are expected to substantially increase the resources available to support academic programs and to replace some of the funds lost in past state-mandated budget cuts. President Shelton has agreed to recommit his focus on financial aid in order to avoid reducing access because of tuition increases.

In the last 10 years, resident tuition increased 93 percent and nonresident tuition increased 55 percent (Figure 7). Most of the increases came between 2003 and 2005, when UA General Fund revenue was at its lowest level in about 20 years (see Figure 5) and were necessary to address an historic under-pricing of tuition, in part related to the state constitutional requirement that tuition be as nearly free as possible. Although tuition has approximately doubled in 20 years (adjusting for inflation), its portion of the UA’s annual revenue has increased only 6 percent since 1979, largely due to much larger increases from other sources. Despite these very significant increases in the overall amount of tuition charged, there has not been a concomitant increase in student indebtedness over this period. For example, the indebtedness for resident undergraduates graduating in fiscal year 2009, on average, increased only about $900 from those graduating in fiscal year 2005, and from an average amount of $16,567 to $17,411 in fiscal year 2009. It is also important to note that the average amount actually paid by in-state undergraduate students, after considering scholarships and financial aid, was $1,977 in 2009-2010.

Despite increases, the UA’s in-state tuition costs have consistently ranked 14th out of its 15 public research university peer institutions, as defined by the Arizona Board of Regents (Figure 7). The UA’s non-resident tuition costs rank lowest. These figures illustrate that the UA, as compared to its peers, remains one of the most inexpensive schools and generates the least revenue from tuition and fees. In fact, among the 34 public AAU Research Universities, UA’s resident tuition ranks 32nd.

Figure 7. Tuition and Fees Revenue UA Selected Peers
Other Means of Increasing Revenues

The campus has mobilized to develop as many new sources of revenue as possible to maintain quality and effectiveness. In addition to tuition and fee increases, the UA has established new fees to support the work of the UA libraries and information technology. In spring 2009, ABOR approved a tuition surcharge to offset revenue declines due to the flagging Arizona economy. The UA also is trying to increase the number of out-of-state and international students to increase overall resources from tuition, and the university is intensifying its fundraising efforts and donor relations. As opportunities develop, some colleges have begun to reduce the proportion of state funding for personnel where grant, contract or clinical revenue can offset state funds.

Budget Redesign

In response to the budgetary changes noted above, the UA, along with many other universities nationally, is in the process of adopting responsibility centered management (RCM) budgets with implementation scheduled in July 2011. This is the single most important change to the planning processes at the University of Arizona. Because the UA is at the beginning stages of implementation, there is still much work to do, yet RCM is expected to significantly change the way that all units on campus plan and budget. This type of budgeting process decentralizes decision making to the college level by distributing tuition funds based on teaching effort and assigning costs that reflect the use of university resources. RCM encourages colleges to emphasize activities that will increase their revenues and decrease their costs to help manage the difficulties associated with the lack of flexible funds noted above.

The advantages of RCM include:

- Greater alignment of decision-making authority with responsibility
- Increased transparency in the budgeting process
- A much broader view of both the direct and support costs required for academic operations.

One result of the many state-mandated budget cuts has been a shortage of funds available at the college level to handle changing enrollment. In response, each semester university administrators provide temporary allocations to colleges so that they have the funding to provide necessary courses—generally general education but also often upper-division major courses. The negotiations back and forth are a time-consuming activity that could be eliminated through RCM, which as a system supports greater shared governance and faculty involvement.

The University of Arizona began to study RCM in the summer of 2008 at the request of Provost Hay. The first committee, chaired by the Dean of the College of Education, recommended that the university implement a responsibility-centered budget that would link resources, cost, and effort. The committee also recommended the new budget plan be applied to colleges, not to departments or schools. Further, the committee recognized the need to reserve a pool of funds for strategic investments by the Provost.

The Vice President for Instruction and the Dean of University College chaired the second committee in 2008-09 in order to identify the policies and practices required to flow tuition and costs to each college. That committee developed a set of guiding principles and specific recommendations for the distribution of tuition based on student credit hours and number of majors. The committee also recommended that a cost assignment process be undertaken by a future committee.

The third committee, co-chaired by the Associate Vice President for Academic Resources, Planning and Management and the Vice Dean of the Eller College of Management, was formed...
to develop models, to analyze data, to create an implementation plan, and to begin a campus-wide conversation about the plan. This committee also modeled the flow of funds to ensure that the process maximizes the intended outcomes and minimizes unintended consequences.

The committee developed a set of cost pools and allocation bases and a timeline for implementation, and it identified obstacles that may slow the process. It has also revisited the tuition distribution algorithm and suggested changes. Several decisions need to be finalized for the plan to be fully implemented. A tentative timeline for full implementation has been developed with initial phased implementation beginning in fiscal year 2011-2012.

RCM also will aid deans and academic unit heads in planning for and funding their instructional activities. It will eliminate colleges’ incentives to reduce the amount of student-centered activities over time. It also will encourage colleges to operate in a more cost-effective manner. Transparency in the budgeting process will increase, allowing colleges to better understand both the level of services provided by the university and the costs of such support activities. Next steps include finalizing the details of the tuition and cost flow algorithms, analyzing the current governance system and identifying ways that it can be used to evaluate and monitor RCM outcomes over time, and finally, implementing the system.

Human Resources

The university’s ability to advance its missions and meet the objectives laid out in ABOR 2020 and the USP depends on maximizing human resources capacity among the faculty, students, and professionals to expand student access and community engagement. This section evaluates the composition of the academic workforce over time and explores the UA’s challenges and opportunities in supporting and managing human resources.

Changing Size and Composition of the UA Community

In the past ten years, the UA has increased the size and diversity of its workforce and students. In 2008, the UA employed 14,663 administrators, faculty, professionals, classified staff and graduate assistants (Figure 8). This 14.7 percent increase since 1998 (12,781 employed) nearly matches the 13.6 percent increase in its undergraduate population over the same period, suggesting that university resources are deployed to manage enrollment changes. These increases are now offset by recent state budget reductions and a directive from ABOR to reduce the university’s salary costs by 2.75 percent in FY 2011. The UA has lost 508 positions in the last year and is likely to lose more in the coming years.

The UA community, like many others nationally, has changed over the past 10 years. Recent budget cuts clearly explain the unfortunate decline in classified staff from 2001 to the present (see Figure 8). Also similar to national trends is the increasing role of academic professionals and other faculty relative to little or no increase in the number of regular faculty (meaning tenure and continuing eligible faculty). While the undergraduate population is increasing, teaching faculty increase is seen outside of the tenured faculty group (see also Criterion Three).

Figure 8. Employee Headcounts By Category
Chapter 3: Criterion Two

The number of tenured and tenure-track faculty has increased 5.1 percent over the past 10 years, from 1,627 in 1998 to 1,711 in 2008 (see Figure 8), with the most growth occurring in 2001 and 2006. A college-by-college analysis of that period (see Figure 9) shows growth was not across the board. The highest percentages of growth generally occurred in some of the smallest colleges, with the exception of the College of Social and Behavioral Sciences. The newly created College of Public Health experienced the most growth (182 percent, from 11 faculty to 31) compared to the colleges of Law (19 percent), Pharmacy (14 percent), Management (13 percent), Social and Behavioral Sciences (9.5 percent) and Fine Arts (8.5 percent). The growth does not correlate well, however, with areas of increase in undergraduate enrollment, although Management and SBS did represent major areas of undergraduate growth not commensurate with the growth of tenure-eligible faculty lines.

Of the UA's 14,663 employees in 2008, 52 percent were female and 24 percent were members of ethnic minorities, percentages slightly higher than those of a decade ago (see Figure 10). These increases occurred in all employee categories, most notably among tenured and tenure-track faculty: 32 percent women and 17 percent minorities, as compared to 27 percent and 11 percent, respectively, 10 years ago. The university's efforts to improve gender, racial and ethnic diversity among faculty and staff in recent years—including former President Peter Likins' diversity initiatives, the NSF-funded UA ADVANCE program and the 2008-09 Diversity Faculty Initiative under the leadership of President Shelton—have likely driven these increases. With its new Strategic Priorities Faculty Initiative, the UA hopes to continue this trend (see also Criterion One).

Figure 9. Change in Tenure-eligible faculty by college. (2008 number of faculty shown above each bar)
Chapter 3:
Criterion Two

Disaggregating the data further shows relative growth among minority subgroups. Proportions of Asian/Pacific Island and Hispanic groups have increased most, whereas proportions of Native American and Black non-Hispanic groups have seen little or no growth. Diversity has increased most among regular faculty, classified staff and professional categories (see Figure 10).

Changing Age and Composition of Faculty

While numbers of tenure-eligible faculty have increased slightly, retention losses and an increasingly aging professoriate suggests that future attention should be placed on developing a strong cohort of mid-career faculty. Mid-career faculty members tend to be the most productive in terms of both research generation and engagement with students, especially in a classroom setting. Figure 11 shows trends in the age-group distribution of tenured and tenure-track faculty between 1999 and 2008. In 1999, 6.6 percent of faculty (102) was 65 years or older. By 2008, that group nearly doubled, to 12.8 percent (173). More specifically, the representation of the 70-and-older group increased from 1.9 percent to 3.3 percent while that of the 65-69 group increased from 4.7 percent to 9.5 percent.
The aging of the tenure-eligible faculty is generally seen as a national demographic due to the aging of the population, in particular the baby boom generation.

Interestingly, however, the proportion of the UA’s early-career faculty (ages 30-34) also increased from 4.6 percent in 1999 to 6.9 percent in 2008, a departure from national trends. A 2008 study by the American Council on Education reported a decline in junior faculty, with only 3 percent of all faculty members in the 34 or younger group at four-year institutions and in full-time positions at community colleges nationally. Part of the explanation is that due to financial constraints, many colleges hired at the junior level rather than the associate or full levels. A discussion of how non-competitive compensation may contribute to the UA’s loss of mid-career faculty and thus to the relative increase of the proportion of junior faculty is included below.

**Changing Role for Non-tenure Eligible Faculty**

National trends show that non-tenure eligible faculty members are becoming more prominent for undergraduate instruction. At the UA, tenure-track faculty members still comprise the bulk of those delivering instruction (see also Criterion Three), increasing in size by only 52 faculty members from 1999 through 2008 (See Figure 12). The largest growth has occurred in other ranks. From 1999 to 2008, the UA increased its non-tenure eligible positions by 38 percent from 527 to 728. Non-tenure eligible faculty members include lecturers, professors of practice, instructors, and clinical, visiting and emeritus faculty, among others. Graduate student instructors grew at a slower rate of 15 percent, yet higher than tenure-eligible faculty. This strategy of growing non-tenure eligible faculty relative to those who are tenure-eligible has helped meet demand. While this is a cost-effective strategy for classroom instruction, research shows that relying heavily on non-tenure eligible faculty, including part-time and adjunct lecturers, may reduce mentoring and advising available to students because these faculty generally are not compensated for these activities (American Association of University Professors, 2003). The UA has put in place measures to help prevent the loss of mentoring and advising. For example, the Arizona Assurance program includes graduate students and staff in mentoring roles, and in the last decade the UA has hired new advisors and embedded them within departments and colleges to facilitate advisor-student interaction. This advising is supplemented by faculty advisors also at the department or college level. The UA, however, is monitoring the impact of the changing distribution of instructors on students (see Figure 12).

**Figure 11. Tenure Track Faculty by Age**

Note: Fields are stacked percentages of faculty with ages 40-49, defined here as mid-career. Numbers and arrows on opposite sides of graph indicate percentage of mid-career faculty in 1999 and 2008.
Chapter 3: Criterion Two

UA Faculty Retention
Over the past decade, faculty and administrators have come together around the importance of improving faculty retention rates. Past analysis of UA faculty loss has shown that faculty salaries lower than the national average contribute to these losses. UA faculty salaries for all ranks are in fact lower than those of AAU public peer institutions (see Figure 13). While the gap narrowed somewhat between 2004 and 2007, it widened again over the next two years, and the disparity in 2008 was greater than it was 10 years earlier. The UA made few salary adjustments between 2007 and 2008. To attain parity with peer institutions, the UA would have to increase the salaries of full professors by 10.8 percent, associate professors by 7.4 percent and assistant professors by 10.5 percent. Because faculty see themselves as part of a national market, the regionally variable cost of living does not factor highly into their own perceptions of being on the low end of the national market. While the UA does not present data by college, the majority of its faculty salaries are below national averages. This is an often-noted underlying cause for faculty retention losses (see Figure 13).

Figure 13. Faculty Salary Comparisons to Peers
In recent years, the UA has prioritized faculty retention through more competitive compensation. In 2005, then President Likins and Provost Davis secured Key Personnel Funds from the Arizona Legislature that were used for salary increases for those faculty who were at the greatest risk of leaving the university and who were highly valued by their units. In the absence of additional sources of permanent salary increases, deans and department heads work with the provost to secure limited central funds, specifically for retention cases. They also have used their own resources to the extent possible, thereby reducing resources available for new or replacement hires.

The budget crisis has dramatically reduced available funds for retention cases. According to a December 2007 Faculty Retention/Loss Report from OIRPS, the last date for which a report of this kind is available, the university's ability to retain faculty who receive competitive offers has improved over the last decade. In 1999, the UA retained only 36 percent of faculty given offers from other institutions. Between 2003 and 2007 that rate was 47 percent to 61 percent, and it is worth noting that total cases declined from 134 to 84.

Although the university appears to be improving its faculty retention, its salary counter offers remain significantly below those of competing offers. From 2003 to 2007, the average outside salary offer was 35 percent higher than faculty’s pre-offer salary, whereas the average UA counter offer was only 16 percent higher. Several potentially important demographic trends emerge from these data. Retention rates are generally better for full professors (69 percent) versus associate or assistant professors (53 percent and 40 percent, respectively) who are generally more mobile nationally. Difficulties in securing funds for competitive offers may be one of the main factors driving the declining proportion of faculty in the 40 to 50 age group. Taken together, these statistics provide some support for the commonly held perception that the university provides resources and incubation for early-career faculty, the best of whom are later hired away. This group of faculty is often beginning to reach or at its full potential, especially in securing extramural research funds, and the UA would benefit by retaining them for future growth.

The university continues to publish a Faculty Loss Report, but since 2007 it has ceased to collect central information on the broader topic of faculty retention, including preemptive retention cases, retention cases where the faculty member decides to stay at the UA, and the general reasons for departures. Information from the Faculty Loss Report is continually included in planning for the future in terms of human resource needs in focus areas. The incidence of pre-emptive retention cases as well as an in-depth analysis of the variety of reasons that faculty members leave is an area that the UA will be exploring more closely in the future as part of an overall initiative to understand how to improve the campus climate for all faculty, but especially for those from underrepresented groups. The Office of the Provost along with the Special Assistant to the President for Diversity and the Vice President for Human Resources are partnering to collect information through several means including an exit interview process from faculty who have left the UA and a review of mentoring programs university-wide to help develop a series of measures to improve faculty retention, especially in the assistant ranks and among faculty from underrepresented minorities.

Physical Resources Planning

The Campus Plan

As mentioned above, the university revised its Campus Plan in 2009. The Campus Plan ensures that the UA has matched its space needs with the availability of space for instruction, research and other important university functions. Despite recent construction and growth, physical space needs remain. Over the last eight years,
the UA has constructed 1.2 million square feet of planned facilities, with growth divided roughly evenly among uses for research, academics, support, residences and parking (see Figure 14).

According to the UA’s 2008 Space Management Report,¹⁶ which uses the Board of Regents space guidelines (in turn based on national guidelines), the university has a space deficit of more than 1.0 million net assignable square feet. As noted above, this is mostly in class and research laboratory space although the library also is in space deficit. These space shortfalls relative to the scopes of the UA’s teaching, research and outreach missions keep it lagging far behind its peers. In fact, when faculty in 11 departments were surveyed to assess the student experience campus-wide (see also Criterion Three), less than half the faculty said they were satisfied with the physical resources available for teaching, and only one-quarter of the surveyed faculty said laboratory space was sufficient. One key aspect of the UA’s space deficit is the lack of building renewal funds from the state of Arizona. In prior years, the UA has received an allocation to support building maintenance. These resources have been less predictable and extremely limited in recent years; however, the UA has received some renewal funding from the state’s Strategic Plan for Economic and Educational Development fund, through debt service support.

The UA’s research, support and other types of facilities have grown much faster than academic facilities in the last six years. Research facilities have been funded through gifts and TRIF, as well as through state funding made available due to broad economic benefits that the state expects to result from the research. Support facilities often benefit from auxiliary enterprises that fund building construction (for example, residence halls are paid for by student rental fees). Parking fees pay for parking facilities. Revenues from food, books and other retail partially cover Student Union and Bookstore construction costs. Donor gifts fund the bulk of athletic facilities and often contribute significantly to all other types of buildings.

In contrast, academic facilities are generally funded by a system of revenue bonds supported by student tuition, gifts or fees. Compounding the space quantity deficiencies has been a steady reduction of funding in state appropriations to the university for building renewal. The UA has had only one state appropriation for building renewal since fiscal year 2002. The last appropriation was in fiscal year 2007, at which time the UA received $10.9 million, which constituted 28.5 percent of the formula the state used to allocate these funds. While building renewal funding in the best of times amounted to only a portion of the university’s needs, funding was provided on a variable percentage basis depending on the financial situation of the state budget each year.

"The cumulative effect of faculty turnover over the past several years is very costly to the universities both in talent and in dollars."

₂₀₀₉ Annual Personnel Report, Arizona Board of Regents
since this was viewed by some as discretionary funding rather than meeting ongoing program and service levels.

Building renewal is critical to the university’s ability to maintain and keep current its physical plant, buildings, labs and classrooms. The university’s deferred maintenance has virtually doubled over the last 10 years, from $19.4 million in Fiscal Year 2000-2001 to $49.2 million in the current year. Looking ahead, this will be a significant challenge that will be paid for by university resources and bonding for improvements; this will need to be covered through other university resources, tuition or donations. The UA has been authorized by the Arizona Board of Regents to issue up to $68 million in bonds for building renewal, and the university will sell $25 million for the most urgent projects this year. The need for building renewal investments, whether state-funded or university-funded, is an important investment that needs to be made in order for the university to remain competitive in cutting edge research, attractive to students and effective in its instruction programs.

**Planning for Physical Accessibility**

The University of Arizona is known as one of the most advanced universities with respect to building environments for physical accessibility. The UA goes far beyond the requirements of the federal Americans with Disabilities Act. It also is in alignment with the mission of the university and with how the central administration defines diversity. The UA is preparing for a future where its campus is physically accessible to all. Over the past five years, Disability Resources staff has engaged in a process to redesign the traditional disability service paradigm to move service provision from an individual, deficit focus to a focus on the design of inclusive environments and to integrate lessons learned from Disability Studies. Beyond the redesign of the Disability Resources Center, the UA also has designed residence halls specifically by using the concept of universal design.

The university houses a state-of-the-art computer facility that supports disabled students and that serves as a community resource. The Technology Center provides specialized tools, including advanced screen reading, text to speech, voice recognition, screen magnification, and Braille output technology. The center serves as a product demonstration and training facility for students, faculty, staff and community members. The center is used by more than 500 individuals each semester.

The university supports the largest and most successful Adaptive Athletics program of its type in the country. Adaptive Athletics provides disabled students and community members with opportunities to participate fully in the higher education experience. Sports teams include men’s and women’s wheelchair basketball, track/road-racing, tennis and quad rugby.

These facilities and programs are evidence of the university’s commitment to making the UA accessible to all students, now and into the future.

**Planning for Sustainability**

The University of Arizona is planning a sustainable campus, an effort that began in the early 2000s. The UA already has joined the green campus movement by participating in recycling and other conservation efforts relating to energy, water, air quality, environment, food, social equity, and climate change. The university is working with student leaders to use some of the revenue from increased tuition rates for measures related to promoting sustainability, beginning in fiscal year 2011. The UA has pledged about $600,000 so far, and the Vice President for Student Affairs is charged with working with student leadership to determine the best use of these funds.

Design engineers from around the world now visit the UA campus to learn more about its innovations. In 2002, the university installed a gas turbine generator with a waste heat steam boiler to power the Arizona Health Sciences Center. In 2004, the UA began to produce ice for cooling during cooler nighttime hours to reduce the
demand for electricity during the heat of the day. The university now has one of the most energy efficient, low-maintenance chilled water systems in the world. The UA also is committed to water conservation and uses reclaimed water for irrigation across the campus. Each year, the UA undertakes a number of conservation programs to plan for future resource conservation.

The UA's resource base does support its expected enrollment and educational mission. Preparing for a future in which the university is not just maintaining but also increasing the quality of its enrollment and faculty requires a reallocation of resources and a rethinking of how they are managed to deal effectively with constraining state budgets, faculty retention losses, and instructional and research space deficits.

**CORE COMPONENT 2C:**
The organization’s ongoing evaluation and assessment processes provide reliable evidence of institutional effectiveness that clearly informs strategies for continuous improvement.

**Extensive Data Collection for Ongoing Planning and Assessment**
The University of Arizona has a decentralized but extensive system of data collection. The Office of the Provost manages academic program and faculty reviews, including the promotion and tenure process. The Vice President for Student Affairs has recently opened an assessment office in its office of Student Transitions. Administrative responsibility for general institutional assessment rests primarily within the Office of the Provost. The Office of Institutional Research and Planning Support reports to the Vice Provost for Academic Affairs.

**Academic Program Reviews**
The Arizona Board of Regents mandates a rigorous Academic Program Review every seven years for all units overseeing academic programs. The review covers all aspects of academic work, including instruction, research, outreach and financial affairs. The Executive Vice President and Provost oversees these reviews, the Vice Provost for Academic Affairs administers the process, and the Office of Academic Affairs provides consultation and assistance. All units are required to provide student outcome assessments as part of this process, and the university makes available online a collection of documents that facilitate the process and make reporting uniform across programs.
Academic Program Reviews provide occasions for comprehensive assessment and a valuable path of communication through levels of administration to the Office of the Provost. However, directed conversations with a group of unit heads and directors indicated a fair degree of cynicism around the effectiveness of academic program reviews during these changing times.

The immediate needs of professional accreditations make Academic Program Reviews (APRs) pale in significance where both are required. While there is often overlap with APRs mandated by the Arizona Board of Regents, the emphases are often different. Based on interviews with academic unit heads, APRs as currently structured are costly and the benefits are not always perceived by the units or their administrators. Many unit heads hold unrealistic expectations for the ability of the process to generate resources such as additional funding and new faculty lines. They fail to embrace the value of gathering intensive assessment of their research, teaching, service and the importance of this assessment for their planning activities. The provost meets with the internal/external review team at the end of the campus visit and then meets with the college dean and department head once the team’s recommendations have been received.

**Accreditation Reviews**
Professional accreditation reviews represent important evaluations for many UA programs and as noted are extensive. Aware that the standing of individual programs impinges on the reputation of other units within related schools and faculties, academic units with professional accreditation devote a great deal of attention and time to maintaining relationships with their accrediting agencies. The outcomes of the reviews are shared with the faculty, dean, and Office of the Provost for use in future planning.

**Non-Academic Reviews**
Although the Arizona Board of Regents does not mandate reviews for non-academic units, UA administrators call for reviews as needed to address unit changes or development. The UA conducts these reviews much like Academic Program Reviews but generally without the expense of external committee members. These reviews are also used to determine the best allocation of resources.

**Personnel Reviews**

**Academic Administrator Reviews:** Deans and heads of units are subject to formal reviews, which occur on a five-year rotation and provide a convenient clock by which to plan for change and development within colleges. To complete the evaluations of deans, specially appointed committee members gather college-wide input and data obtain feedback from constituencies outside of the college, and review a self-study written by the administrator. College dean review findings are reported to the Provost. Department head reviews are conducted with a similar process of a self-study written by the head and a specially appointed committee that gathers data and input from the head’s units as well as from other constituencies.

**Promotion and Tenure Reviews:** The UA also requires rigorous, carefully monitored reviews for tenure and continuing-track faculty members. Different tenure requirements create differences in reviews; however, the UA maintains a generally uniform process of promotion and tenure reviews, with unit heads and departmental, college, and university tenure committees making formal recommendations to the Provost, who makes the final decision. Appeals are referred to the President. The university has recently instituted a single probationary review at three years instead of the previous two- and four-year reviews. In lieu of the additional in-depth review, then Provost Davis mandated an annual progress-toward-tenure review for tenure or continuing eligible faculty as part of the annual performance review process.

**Faculty Annual Performance Reviews:** The UA conducts annual performance reviews for all tenure-eligible and tenured faculty. Annually, deans report to the Provost and then to the Regents on the outcomes of reviews for tenured faculty as part of a post-tenure review system. The review process has come under some criti-
cism recently for a lack of uniformity across units and colleges. Four colleges—Agriculture and Life Sciences, Social and Behavioral Sciences, Public Health and Fine Arts—are addressing this problem by using an online system for systematic data collection in annual performance reviews. Developing a unified online system for data collection across the entire university is currently underway by the Office of the Provost.

The Arizona Board of Regents mandates a specific review of faculty after tenure called post-tenure review. In most cases, this review is coterminal with the normal annual performance review. Some faculty and staff perceive the process as ineffective in improving productivity. While it sustains peer pressure to remain productive, the university does not maintain strong remediation or mentoring programs to help faculty and staff improve performance. Faculty can self-refer and unit heads do have the responsibility of referring faculty members who need or want to improve instructional skills through a new unit, Office of Instructional Assessment (see also Criterion Three).

Teacher and Course Evaluations: The university requires that each instructor provide his or her students with a standardized questionnaire to evaluate the instructor’s course. A unit or faculty member may customize the questionnaire. The Teacher and Course Evaluation (TCE) results are available online to those with a UA e-mail account. The forms evaluate student satisfaction with the instructor and the course material, gauge the difficulty of the course, and assess the degree to which students feel they are treated with respect. Many academic units use TCE results when planning curriculum and evaluating the effectiveness of instructors.

Classified Staff and Appointed Personnel Evaluations: The UA takes the approach that evaluation is a continuous process and a conversation between a supervisor and an employee. That conversation includes discussion of assignments, the level of performance considered acceptable, and consistent feedback, both formal and informal. The Human Resources website has materials that support this approach and provides employees with information to help them create successful work environments. The UA requires that each classified staff and appointed personnel member be reviewed annually by his or her direct supervisor. The HR website includes extensive information as well as sample evaluation forms.

Institutional Evaluation and Assessment: The University’s Office of Institutional Research and Planning Support is responsible for data on student enrollment, persistence and graduation and institutional research, planning and special services. The office conducts a variety of data-collection activities; it facilitates student surveys, coordinates data collection on students and employees, and issues documents on key university information, including enrollment reports and the UA Factbook.

The University also operates an Integrated Information Warehouse and is working toward linking various data sets to connect UA students’ high school, community college and UA data and students’ post-graduation employment and income data. This makes it possible to connect patterns of pre-UA achievement to likelihood of graduation and prediction of post-UA activities. New administrative systems being implemented through the MOSAIC Project (see below), coupled with improvements in Business Intelligence, will replace and improve the university’s existing data management systems as they become available. This is a key example of how the UA is moving into the future.

Collectively, these data gathering units make a large amount of information available to faculty and administrators for their use in tracking activity, assessing effectiveness and planning for continuous improvement. For example, academic advisors can access institutional data to generate real-time rosters of students by majors or to monitor admission to a major for future semesters.
The data also provide information on Key Indicators and Targets identified by the UA’s Five-Year Strategic Plan 2010-2014: research expenditures, undergraduate and total enrollments, freshman retention rates, six-year graduate rates, numbers of degrees awarded, students transferring from Arizona community colleges and the number of them who earn degrees. As noted below, these data are enhanced by the new Business Intelligence system that will assist in planning and bridging to the future.

MOSAIC - The Case for New Administrative Systems

In order to prepare for the future given societal and economic change, the UA realized a few years ago that updating core administrative systems was essential to preparing and planning for the future. In November 2007, the President’s Cabinet requested that the Chief Information Officer assess what would be required to go forward with an enterprise systems replacement strategy. During December 2007 and January 2008, a team of business and technical leaders concentrated on the option represented by the PeopleSoft component, drawing heavily on the experiences of ASU and other institutions. It was decided that the UA would move forward with the PeopleSoft option for most of its administrative system update.

The business case for moving forward is compelling. The UA’s past administrative systems were technologically outdated, and the ability to operate and maintain these systems was at great risk. Severe limitations in system capabilities exposed the UA to negative audit findings with substantial consequences. Lack of effective integration between systems hampered the university and led to extra work, audit recommendations and inconsistent information. As one of the few major universities that had not replaced its enterprise systems, the UA was at a competitive disadvantage as a result.

Implementation of the MOSAIC project is occurring over a three-year period with most of the milestones occurring in the second year and early in the third year—2010 and 2011, respectively. The estimated incremental cost over a five-year period is $80 million, excluding contingency fees. Updates on the MOSAIC implementation are posted regularly.

Business Intelligence

Obtaining consistent data and creating meaningful reports has been a major challenge for the UA. Day-to-day university operations demand timely and accurate information, and executive administration and the Regents increasingly ask for more information to make business decisions on short notice. With the implementation of the new transactional systems, the realization of Business Intelligence will make enormous amounts of integrated data readily available, leading to faster and better decision making.

Business Intelligence will enable the University of Arizona to:

- access and retrieve financial, research, personnel and student data from one single source
- give easy and secure access of relevant data to all levels of management or units
- spend minimal time on data retrieval, but dedicate significant time to data analysis and decision making
- make data, reports, analysis and models available to a broad user base.

Organizational Impact of MOSAIC

The implementation of new core administrative systems has had an enormous impact on the University of Arizona. The period of implementation, including the first year or so after each “go live” event, has been both exciting and difficult. After the initial transitional phase, the helpful changes to processes and organizational structures and the institution of maintenance and support of these new systems will be clear to users. Each “go live” event has encountered some technical challenges that have been dealt with effectively. For example, a challenge occurred during the payroll switchover that was handled quickly and efficiently in order to minimize the impact of delayed paychecks. It is expected that continuing improvements will be required by the MOSAIC team, as each system moves online.

Enterprise solutions result in a migration of administrative responsibilities to the units that “own” the systems. Many of the technical skills necessary for maintenance of the university’s current systems will no longer be required. New and different information technology competencies are highly valued in the marketplace, and their availability in Tucson may be limited. This may have a great impact on the university’s administrative IT units with respect to hiring, training, and compensation.
Chapter 3: Criterion Two

Core Component 2c: Summary
The UA has developed flexible means of evaluating and assessing its institutional effectiveness. The UA is in the process of updating some of these in order to prepare for the future. Others, such as personnel and program reviews, likely will need to be re-evaluated for a future with very different resource and incentive bases. Replacing the university’s computerized legacy systems will prepare the UA to meet future challenges in developing evaluation practices in an integrated manner. Having the tools does not necessarily create the culture of evaluation at the institution.

CORE COMPONENT 2d:
All levels of planning align with the organization’s mission, thereby enhancing its capacity to fulfill that mission.

Arizona state law mandates that ABOR and each university have a Strategic Plan (SP). All colleges and most units across the UA also have strategic plans—indicating active planning at various levels across campus. Interviews with deans, vice presidents, unit heads and directors, as well as a detailed review of university documents inform this section of the report.

The Planning Process
The Strategic Planning and Budget Advisory Committee (SPBAC) creates the University Strategic Plan (USP), as well as occasional studies, such as a recent report on expectations for unit-level environmental scanning and the UA Progress Report. The USP is informed by the ABOR Strategic Plan 2020, discussed above. SPBAC, composed of elected and appointed administrators, staff and faculty, is charged with developing strategies across the entire university and helping to set budgetary priorities.

In interviews with vice presidents, deans and department heads, many administrators expressed mixed opinions of the effectiveness of SPBAC as a planning committee; they generally felt that the USP process is improving, especially in more clearly laying out the mission, goals and strategies of the UA, seeking input from deans, and becoming more precise in its work. Interviewees also expressed high regard for SPBAC’s recent policy statement on methodology and proper categories for environmental scanning.

Several deans praised the planning process and noted that they distribute the USP to those involved in their college-level planning processes so that the USP can be used to deliberately guide decisions about internal resource allocation. Still, many more questioned whether SPBAC is used effectively by the central administration, whether its work is inclusive and—despite acknowledgment that the USP is necessarily broad and general—whether the committee’s plans are precise enough to make a difference. Some deans criticized SPBAC for not seeking more input and not fostering widespread investment in the USP process. Essentially, the work conducted and produced by SPBAC received mixed reviews by administrators, in part, because of concerns over the effectiveness of the committee in terms of making a real difference in the central decision-making processes.

A recent change in the work of SPBAC addresses many of the concerns voiced by faculty and administrators. In Fall 2009, SPBAC and Faculty Senate leadership spearheaded a faculty poll that revealed some faculty concerns over inclusiveness in budget cut planning processes. The same leadership recommended to the President that SPBAC create a new subcommittee, called SPBAC 2012 that would be charged with advising on major issues in a proactive manner with a commitment to maintaining the highest quality academic programs. The membership is drawn from all internal constituencies including students, appointed personnel and staff. By spring 2010, SPBAC 2012 had developed a series of measures to help position the university to more effectively manage future cuts. Draft ideas were reported to the Faculty Senate in May 2010.
Chapter 3: Criterion Two

Focused Excellence and UA Transformation

Most administrators interviewed acknowledged that today’s rapidly changing environment complicates long-term strategic planning efforts. Units often find themselves engaging in planning that is outside regular strategic planning mechanisms—that is, focused planning directly in response to changing conditions. Since the last self-study, two campus-wide reorganization and realignment initiatives have been undertaken including Focused Excellence (FE), initiated in 2002, and UA Transformation (UAT), initiated in 2008.

Established under former Provost George Davis and former President Peter Likins, FE articulated a goal of investing in programs in which the UA excelled. A very substantial list of proposals for possible mergers, eliminations or reorganizations was received. Guided by the extensive consultations that followed and in conformity with procedures for review agreed upon with the Faculty Senate, alternatives were explored, positions were modified, and finally, proposals were advanced and acted upon. This campaign was just the beginning of the hard work needed to focus the university’s efforts and resources on a slightly truncated list of programs and organizations. Focusing requires cutting, strategically, and cutting is always hard. Focusing also means that entities must concentrate efforts and resources strategically. SPBAC responded to Focus Excellence by articulating a list of disciplinary priorities that is included as part of the USP.

Administrators interviewed felt that FE planning excluded many of the university’s constituents, including faculty, staff, students and external stakeholders. Disappointment was also expressed that the initiative did not appear to result in resources flowing to areas of excellence. They noted that because the USP of that time did not define UA focus areas as well as the current USP, there was poor buy-in from the UA community. This suggests the need to better link the strategic plan with strategic initiatives.

The UA Transformation continued efforts that started with Focused Excellence. The UAT resulted in more than 75 proposals for restructuring, which were submitted to the Provost. The proposals were then vetted by a faculty committee and by the President, the Provost and community stakeholders. Large-scale reorganizations and consolidations occurred in Student Affairs and Human Resources, as well as in units reporting to the Vice Provost for Academic Affairs and what was then the Office of the Vice President for Instruction. Additional reorganizations occurred in colleges, with some units moved across college lines and other units merging and closing. Four colleges—Fine Arts, Social and Behavioral Sciences, Humanities and Science—were integrated into the Colleges of Letters, Arts and Science. The Faculty Senate developed guidelines for reorganization proposals and the President charged a taskforce with developing the UA Merger Guide. The Faculty Senate and SPBAC developed guidelines to be used to evaluate the level of priority for each UAT proposal: centrality to UA mission, vision and priorities; internal and external demand; productivity, quality, appropriate unit size; and cost effectiveness.

Opinions about UAT are mixed as well. Some of those interviewed felt that UAT was creative and forward-looking and that it was, in fact, time for a shakeup. Nearly everyone pointed to at least one transformation with a positive outcome, such as consolidations or the emergence of a new school. Those expressing unfulfilled expectations felt that UAT could have been bigger, moving beyond academic structures to administration, rules and policies, and community and state relations. Additional concerns were stated about how well UAT articulated with the USP.

Finally, interviewees reported that some units operated in a state of urgency, trying to umbrella other units without collaborative exercises or shared goals. Some expressed concern that, in spite of potential efficiencies, UAT’s realignments will do little to save money. Provost Hay’s most recent memo on the outcomes of UAT states that the public focus on budget cutting overshadows the important outcome of UAT—that it “strengthens the quality of research and teaching programs as it increases efficiency, and makes the University more resilient and nimble, benefitting faculty, staff, students and the community.”

Planning at the College and VP Level

This analysis found a mixed result on the extent to which deans, vice presidents and department
heads agree that plans at the college and vice president level align with the USP. Some deans and vice presidents admitted to more decision making guided by general principles rather than strategic plans, but most could describe detailed planning processes within their colleges or other units. Some colleges rely on a group of unit heads and senior faculty for planning. Some engage these faculty members with an external advisory board, and others follow the mandates of accreditation agencies or external stakeholders such as private corporations and industry.

In addition to the concerns stated above, interviewees commonly identified two needs: ways to improve collaboration and communication between deans and vice presidents, and a desire for additional guidance from upper administration on meeting UA priorities.

Unit-Level Planning

During the small group conversations with unit heads, most stated that they believe they have been remarkably resilient in adapting to rapidly deteriorating fiscal conditions by real-locating resources, pursuing alternative revenue streams and simply “doing more with less.” An overwhelming number of department heads and senior faculty—70 small-group session participants—feel that long-term, visionary planning and subsequent plan execution are all but impossible in this constantly changing environment. Planning processes are mostly reactive, adaptive and self-preserving, they said. And as one interviewee noted, “It feels as if we are only reacting now and not planning.” Rarely do unit heads feel they have the self-reliance and resources to carry out a long-term strategic vision consistently.

Unit heads and directors note a long history of lateral cooperation among units and colleges, which drives the success of most of the UA’s excellent departments and programs. Examples include simple things like cross-listed courses to more resource-intensive activities such as supporting graduate interdisciplinary programs and collaborative research programs involving people from many units; the BIOS Institute is an outstanding example. Interviews at all administrative levels suggest that improved planning will result in more secure and reliable funding.

Department heads, directors and deans identified four main concerns about the university’s planning process:

- The unavoidable decoupling of planning and budgeting processes
- The fact that the University Strategic Plan is often reverse engineered to their departments, divisions and colleges rather than being driven by them
- A tendency toward reactive rather than strategic planning
- The interruption of normal planning by exercises such as Focused Excellence and UA Transformation
Despite these concerns over planning, a strong culture of collaboration among faculty and deans exists around offering interdisciplinary degrees and conducting multi- and inter-disciplinary research across units and colleges. Given this, the newly created Colleges of Letters, Arts, and Science provides a tremendous opportunity to expand collaborative efforts. The challenge is building upon successful academic planning to bridge to the future.

Core Component 2d: Summary

The UA is improving the alignment of planning and budgeting to highlight key areas of its mission. Navigating recent financial crises and managing the structural need for change have resulted, in part, in the campus community feeling that planning is not optimally aligned across all levels of the university. Concerns about reactive rather than strategic planning, and difficult communication with respect to planning and budgeting, appear to pervade university members’ perceptions of planning and budgeting.

Bridging to the Future: Preparing for the Future

The UA faces unprecedented financial challenges as it bridges to a future of expanding access and enhancing educational excellence; increasing achievements in scholarly activity; broadening community engagement and workforce impact; and improving productivity and increasing efficiencies. The future is one where the UA is a university that stewards and leverages declining state resources in order to manage demographic, economic, and environmental pressures on its ability to fulfill its mission. The complexities inherent in a dynamic environment create opportunities for innovation that require fundamental and systemic changes in financial models while enhancing access, quality and discovery. As a direct result of the self-study process, the President and Provost charged two taskforces in Fall 2010 to achieve the following goals. The task forces are called Planning and Budgeting for the Future and Assessment and Decision Support.

- **Improved alignment of planning and budgeting** at and across all levels that enhances plan communication and the inclusiveness of all planning processes. All plans should also identify budget resources.

- **Rapid implementation of budget redesign** and development of new or additional means of revenue generation. Educating units and engaging more faculty members in fundraising will aid these efforts.

- **Investment in the UA academic workforce** should include intensifying efforts to diversify the faculty and creating strategies to promote more effective management of the UA’s instructional load and research mission.

- **Improved data infrastructure** and sharing of information across the university will enable evaluation and assessment to be embedded in every program.
7. http://factbook.arizona.edu/2009-10/students/costs
19. http://drc.arizona.edu/
22. http://provost.arizona.edu/program.php
23. http://facultyaffairs.arizona.edu/promotion
24. http://facultyaffairs.arizona.edu/faculty_review
Chapter 3: Criterion Two

25  http://aer.arizona.edu/aer/

26  http://www.hr.arizona.edu/05_prf/perfmgmt/

27  http://factbook.arizona.edu/


30  http://mosaic.arizona.edu/mosaic_news

31  http://plan.web.arizona.edu/


33  http://spbac.web.arizona.edu/sites/spbac.web.arizona.edu/files/SPBAC%20Environmental%20Scan_1.pdf

34  http://oirps.arizona.edu/files/SPBAC/UA_Prog_Rpt_wlm11_06_v1.pdf

35  http://lqp.arizona.edu/node/2627

36  http://nca2010.arizona.edu/documents/Criterion%20Future/FocusedExcellence001.pdf

37  http://provost.arizona.edu/transformation_information

38  http://provost.arizona.edu/transformation_outcomes

39  http://provost.arizona.edu/node/354
Chapter 4: 
Student Learning and Effective Teaching 
(Criterion Three)
CHAPTER 4

Criterion Three: Student Learning and Effective Teaching

The organization provides evidence of student learning and teaching effectiveness that demonstrates it is fulfilling its educational mission.

INTRODUCTION

The UA’s commitment to access, quality and discovery is clearly exemplified by the experiences of its students, in the classroom and beyond. Access has increased for Arizona residents, even with tuition increases. The quality of the educational experience has improved. Services that recruit and prepare students for study at the UA have increased. Student learning and effective teaching at the UA is the essential focus of the campus community. The student educational experience in the past 10 years has involved a conscious integration of classroom and beyond-the-classroom experiences. As a result of the UA’s focus on the student experience, undergraduates are now retained at slightly higher rates and graduate more quickly than in the past. UA persistence rates for minority students as a group are nearly identical to those of the total undergraduate population, although there are variations between different populations of minority students. Minority graduation rates, while still lagging behind the overall graduation rates, have seen significant increases.

UA assessment of student learning outcomes and programs is very strong for degree programs and units with professional accreditation, and significant strides have been made for the rest of campus in the years since the 2005 interim report on assessment.

Innovative practices are important drivers of student success. A number of first-year “success” courses have facilitated students moving through their academic programs. Students are engaged not only in the classroom but also by extensive promotion of individual and directed research and experiential learning opportunities throughout the university. Interdisciplinarity still is a strong characteristic of both the undergraduate and graduate experiences and will become more so in the future.

Recent changes focus on further improving the student experience. For example, in January 2010 the UA created the Office of Instruction and Assessment to support faculty in those areas. In Fall 2010, the Colleges of Letters, Arts, and Science began a new initiative to promote new interdisciplinary undergraduate majors.

The UA’s success in student learning and teaching effectiveness comes at a time when challenges such as financial strain, increasing student credit hours per tenure-track faculty member, and a restructuring of the proportion of instructional faculty could have been overwhelming detractors from the student experience. The university’s continued success suggests that the UA is effectively improving the quality of the student experience.

The financial challenges continue and could take away from the effectiveness of student learning in the future. In order to better understand what is considered most effective in the student experience from the perspective of the students, faculty, and administrators, an 11-unit Case Study surveyed department administrations, faculty, and students about assessment practices. Information from the case study is included in this chapter.

Graduate education remains a very strong focus of the UA, where a large number of departments are nationally ranked and which offers a robust set of 14 Graduate Interdisciplinary Programs. The Graduate College has undertaken a series of initiatives to help departments improve the graduate experience from time to degree, to manage excessive concentrations of graduate students with a small number of faculty, and to limit the inappropriate use of course incompletes.
Here are some of the highlights of the UA student experience:

- Four- and six-year graduation rates have increased dramatically over the last 15 years. Four-year graduation rates have doubled to 36 percent and six-year graduation rates have increased from 51 percent to 58 percent over the same time period. Overall minority four-year graduation rates also more than doubled during this time, but still lag the overall rate by 7 percent. Minority six-year graduation rates increased 11 percent to 52 percent. Overall first-year persistence has increased about 5 percent to 78 percent, with overall minority first-year persistence increasing about the same amount, to 76 percent. There are still substantial variations within different minority groups in terms of persistence and graduation rates, typically with Native American students showing the largest discrepancies.

- The UA is a student-centered research university. In the survey of seniors who graduated between Fall 2008 and Summer 2009, 55 percent reported involvement in a research project or program, and an additional 12 percent reported involvement in a UA performance, public presentation, or design project.

- The UA’s 14 Graduate Interdisciplinary Programs (GIDPs), with subjects ranging from American Indian Studies to Statistics, offer a variety of degrees and certificates including Ph.D. majors and minors; M.S., M.A., and P.S.M. degrees; and graduate certificates. GIDPs transcend departmental boundaries by facilitating cutting-edge teaching and research at the nexus of traditional disciplines. The high value placed on interdisciplinary research and education is indicative of the University of Arizona’s enthusiasm and commitment to fostering innovation and creativity among its faculty and students.

- The world-renowned UA School of Dance, which routinely auditions an international group of more than 400 students for 35 annual acceptances, offers a conservatory approach in a liberal arts setting and takes pride in being part of a highly ranked institution. The School is known for the way it integrates classical, jazz, and modern dance into a curriculum that focuses on international performance and education and on service to and engagement with the local community.

- The UA’s award-winning McGuire Entrepreneurship Program offers a one-year interdisciplinary curriculum designed to prepare selected students for success as entrepreneurs and business leaders. Since 2002 the program has been ranked as one of the nation’s top five entrepreneurship programs. It integrates theory and application, enabling students to focus on analysis, decision-making and business planning. Students also benefit from the perspectives of both academic and adjunct faculty who work together to provide integrated and relevant curriculum, including the latest business trends and techniques.

CORE COMPONENT 3A:
The organization’s goals for student learning outcomes are clearly stated for each educational program and make effective assessment possible.

Undergraduate Education
Assessment of student learning is central to the University of Arizona’s effort to provide access and quality education to nearly 30,000 undergraduates and nearly 10,000 graduate students. The university communicates a consistent, coherent message about the value of assessing student learning. This section provides informa-
Chapter 4: Criterion Three

Institution about university-wide efforts to improve and support assessment at the undergraduate and graduate levels, beginning with the following chronology of assessment efforts since the 2005 NCA Interim Report:

**Spring 2005:** The UA Assessment Progress Report was submitted to and accepted by the NCA.

**Spring 2006:** The UA participated in the National Survey of Student Engagement (NSSE).

**Fall 2006:** General Education program goals and objectives were assessed.

**Spring 2007:** A Leadership Team for Outcomes Assessment (LTOA) was formed; it developed a course embedded approach to assess student writing in General Education.

**Fall 2007:** The General Education Feasibility Study was implemented in six general education classes.

**Spring 2008:** The Leadership Team on Outcome Assessment became the Assessment Coordinating Council (ACC), the coordinating resource for assessment activities for the campus. The UA Assessment Website was redesigned to reflect assessment overviews, expected outcomes, and use of assessments results by academic departments and student support units. The General Education Pilot Study focused on skills for students’ success and on critical thinking. A total of 141 course sections and 26 faculty members participated in the pilot study.

**Fall 2008:** The “Advancing Student Learning through Outcomes Assessment” workshop provided practical advice on writing student learning outcomes, appropriate measures of student learning, and program assessment. Drafting of the UA Assessment Plan 2009 began.

**Spring 2009:** An Assessment Showcase, “Best Practices in the Assessment of Learning and Teaching,” covered grading rubrics, writing multiple choice questions, portfolios, and student support services, among other topics. The Critical Thinking Assessment Project collected and analyzed baseline information about students’ critical thinking skills at the lower and upper division levels. The NSSE was administered. Comparison reports for 2006 and 2009 NSSE administrations were generated and provided to the colleges. An Assessment Website Workshop, held in May 2009, helped colleges and departments post assessment outcomes, activities and results.

**Fall 2009:** Eleven UA departments participated in assessment case studies designed to identify and document how faculty and students practice and experience learning assessments. Results will be described in the next section. More than 250 student assignments in English composition and Tier Two courses were collected and scored independently as part of the Critical Thinking Assessment Project. An interactive Assessment Workshop, held in November 2009, helped departments undergoing academic program reviews (APRs) during the 2009-10 academic year. The workshop provided practical advice on writing student learning outcomes, identifying appropriate measures of student learning, and carrying out program assessment.

**Spring 2010:** A total of 280 papers were collected and scored, 172 from Tier Two and 108 from English composition, as part of the Critical Thinking Assessment Project. The results were encouraging—71 percent of students in both groups scored within the satisfactory or excellent range. The project will continue into Fall 2010. An Assessment Showcase, “Program Assessment: Doing it Well,” with Assessment Recognition was held in April 2010. The showcase included a focus on student support programs and graduate education and a presentation on tools for program assessment. Participants were able to attend concurrent sessions that focused on assessment within colleges at the UA. More than 80 undergraduate and graduate programs received recognition for “Achievement in Assessment” from the Office of the Provost and the ACC after demonstrating progress in assessing student learning through productive and sustainable means. The assessment portion of the Academic Program Review process was examined with the goal of providing more useful information for the participating department and the Office of the Provost.

**Current Assessment Activities**

Campus-level assessment activities are essential for evaluating progress toward educational goals and institutional priorities. Many of these activities are outlined on the UA Assessment Website. Some current activities include:

- Ongoing surveys of the student body, including the New Student Survey, Student Experi-
Assessment projects focused on General Education Outcomes, such as writing, critical thinking, and information literacy.

- Capstone courses designed to build on skills acquired in earlier courses and to emphasize specific learning goals and course objectives that vary across disciplines.

- Retention and graduation rate analyses. Special graduate student assessment using criteria established by the National Research Council.

Examples of Closing the Assessment Loop

The UA Assessment website contains outcomes for undergraduate and graduate degree programs. As important as defining outcomes is, however, formative assessment requires that assessment results be used to improve student learning and academic programs—in other words, that the assessment loop be closed. This section provides evidence from four programs that have closed the assessment loop especially well.

Chemistry 151-152: A Two-Semester General Chemistry Sequence

The Chemistry department uses a common final across all sections of Chemistry 151-152 and has been disappointed with both low scores on common final exams and low final grades in both courses. In the two years before revising the sequence in 2008, the average on the Chem 151 and 152 common finals were 54.0 and 45.2 percent, respectively, and average final grades for those who passed the courses were 67.1 and 64.4 percent, respectively. During the 2008 academic year, the courses were revised by a) combining the lecture and the lab into a single course; b) integrating the discussion sections with the laboratory work; c) homogenizing the curriculum among all the course sections; d) creating learner-centered educational modules that involve students in collaborative group work activities during the lecture, laboratory, and discussion sessions; and e) implementing common assessment tools (including a robust online homework system). The revised sequence was offered during the 2009 academic year and resulted in significant improvement in all measures. Common final exam scores improved to 59.3 percent and 49.9 percent, respectively, and final grades for those who passed the courses improved to 70.7 and 68.1 percent, respectively. A pre-test given before and after the revision showed no statistical difference between the preparedness of the students. An additional benefit of the revision has been a reduced rate of students failing the classes. Before the revision, 11.4 percent and 14.4 percent of the students failed the two courses, respectively, while only 6.5 percent and 4.8 percent failed after the revision.

Mathematics Placement Exams and Passing Grades

Incoming freshmen have been given a math placement test since the early 1980’s. Student scores are used to determine which math courses they are permitted and prepared to take. The math department annually reviews the cut-off scores used on the placement tests and adjusts them based on student outcomes in the courses that they take. In 2009, the previous written test was replaced with an online diagnostic test developed by Assessment and Learning in Knowledge Spaces (ALEKS), a Web-based, artificially intelligent assessment and learning system. This new adaptive test provides a much more detailed analysis of what students know. In addition to providing a score that can be used for placement, the test also gives students a detailed breakdown of which areas they have mastered and which they need to work on. There is an associated online instruction product that students can use to improve their knowledge before retesting. The UA will use these data to inform course design. Prior to the UA implementation of ALEKS, Pima Community College would accept scores on the UA placement exam, if sufficiently high, to place students into intermediate and beginning
algebra classes. Pima is currently not accepting the online ALEKS test because of concerns about cheating on an unproctored exam. The UA also has been concerned about such cheating and has changed its policy so ALEKS retests are now proctored. The UA will evaluate the results of that policy change in January 2011 and may require 100 percent proctored exams in the future.

Over the last five years, the Math department also has done an analysis of student outcomes in courses and the relation of those outcomes to the grades that students received in the prerequisite courses. The results indicate that the large majority of students who passed the prerequisite with a D, received a D or an E or withdrew from the follow-on course. As a result, the Math department changed the prerequisite requirements for Math 124, Math 129, Math 223, Math 254 and Math 215 so that a grade of C or better is now required in the prerequisite course (120R for 124, 124/5 for 129, and 129 for 215, 223 or 254). This change will be implemented in Fall of 2010.

The College of Science Teacher Preparation Program

The undergraduate College of Science Teacher Preparation Program, or CoS TPP, prepares science majors to become teachers of science in grades 7-12. The courses and in-school experiences comprising the program are built upon a set of seven core understandings, or student learning outcomes. For example, one of the core understandings states that CoS TPP students “make coherent curriculum decisions that promote their students’ (1) engagement in learning, and (2) understanding of science. They plan, implement, and assess the outcomes of lessons with student learning goals guiding their choices and actions.”

To evaluate the degree to which CoS TPP students demonstrate this core understanding, assessments are implemented in three separate program courses and during a student teaching internship, as well as through portfolios, a decision-making analysis, and a teaching dilemma analysis. Assessment data are regularly reviewed with regard to the program’s core understandings, and changes in the program are made accordingly. For example, assessment data inspected for evidence of the core understanding quoted above revealed to the faculty that many CoS TPP students were using inappropriate evidence to assess student learning; for example, “The students are really understanding this concept because they are so engaged in the hands-on lab activity.” In order to increase the CoS TPP students’ use of student learning evidence, rather than simply basing their assessment on something such as observations of student engagement, the faculty decided to make the following two program changes: to increase the number of class sessions designed to promote understanding of what counts as evidence of student learning and to add or change some assignments in later courses to increase opportunities for analysis and assessment of real student work. Collected data will be analyzed again in 2010-2011 to determine whether students have improved their abilities to use appropriate evidence when engaging in assessment of their students’ learning.

Freshman Retention in the College of Engineering

In Fall 2005 the College of Engineering collected the following data concerning retention and graduation rates of new freshman in Engineering (see Table 1).

Table 1. Retention and Graduation for First Time Full Time Engineering Students Fall 1997 - Fall 2004. The UA Academic Index is based on a weighted average of high school GPA, standardized test scores, and courses taken

<table>
<thead>
<tr>
<th>New Freshmen Profile</th>
<th>Fall ’97</th>
<th>Fall ’98</th>
<th>Fall ’99</th>
<th>Fall ’00</th>
<th>Fall ’01</th>
<th>Fall ’02</th>
<th>Fall ’03</th>
<th>Fall ’04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headcount</td>
<td>421</td>
<td>533</td>
<td>509</td>
<td>547</td>
<td>666</td>
<td>636</td>
<td>635</td>
<td>578</td>
</tr>
<tr>
<td>Mean Attempted Credits</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>14.74</td>
<td>14.82</td>
<td>14.73</td>
<td>15.03</td>
<td>14.81</td>
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<tr>
<td>HS Academic GPA</td>
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<td>N/A</td>
<td>3.31</td>
<td>3.46</td>
<td>3.45</td>
<td>3.45</td>
<td>3.43</td>
<td>3.47</td>
</tr>
<tr>
<td>UA Academic Index</td>
<td>195.0</td>
<td>190.8</td>
<td>188.3</td>
<td>190.5</td>
<td>190.0</td>
<td>198.5</td>
<td>197.6</td>
<td>202.8</td>
</tr>
<tr>
<td>1x/FT UA Yr1 GPA</td>
<td>2.73</td>
<td>2.71</td>
<td>2.70</td>
<td>2.82</td>
<td>2.72</td>
<td>2.71</td>
<td>2.69</td>
<td>2.71</td>
</tr>
<tr>
<td>1x/FT Not Earning 2.00 GPA</td>
<td>77.9%</td>
<td>74.3%</td>
<td>79.0%</td>
<td>83.7%</td>
<td>75.5%</td>
<td>79.3%</td>
<td>83.9%</td>
<td>78.5%</td>
</tr>
<tr>
<td>1x/FT Retention</td>
<td>57.8%</td>
<td>52.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x/FT 6 Year UA Grad Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Having more than 20 percent of freshmen earning less than a 2.0 GPA, retention values below university levels, and six-year graduation rates well below university levels led college faculty and administration to develop a retention plan containing these key points:

- Take control of admissions by increasing standards and evaluating applications at the college, rather than at the UA, level. Advertise the increase in quality in all recruiting presentations to high-school students and their parents.

- Construct a new classification—pre-engineering—where students with lower success levels would be placed for special advising, classes, and student support.

- Start a freshman “success” class (ENGR 197) and make it mandatory for all pre-engineering students.

- Run and monitor a math tutoring program for pre-calculus and calculus students. College data suggested that UA GPA and retention in the College and the UA were highly correlated to math grades in these two classes.

The programs were implemented for the Fall 2006 entering class. Table 2 contains some of the results (Fall 2005 is here for comparison only):

Enrollment initially dropped when standards were raised, but have since surpassed the 2005 levels. All outcome measures have improved, and first-year retention now surpasses the university value.

The College has used these data in proposals to fund recruiting and retention programs to both foundations and industry partners. This has resulted in over $3 million of new funding, including a $2.4 million NSF GK-12 grant, $500,000 from Science Foundation Arizona for an AP engineering experience, and $150,000 from industry partners for tutoring and ENGR 197 support.

Results from the 11-Unit Case Study

The analysis of Criterion 3 prompted many questions that standard institutional statistics could not answer satisfactorily. For instance:

- What mechanisms are in place for regular evaluation and modernization of curricular content at the department, college and university level? What are the results from these mechanisms and how does the UA respond to them?

- Are value-added assessments being used to improve education at department, college and university levels? What are the results and how does the UA respond to them? How does this information flow through the organization?

- What is the student engagement with research in the unit and outside? How do faculty and the department communicate research opportunities to students and alumni?

Table 2. Retention Information for First-Time Full-Time Engineering Students since Introduction of Program Changes in Fall 2006, with Fall 2005 Data Provided for Comparison.

<table>
<thead>
<tr>
<th></th>
<th>Fall '05</th>
<th>Fall '06</th>
<th>Fall '07</th>
<th>Fall '08</th>
<th>Fall '09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headcount</td>
<td>525</td>
<td>453</td>
<td>470</td>
<td>511</td>
<td>561</td>
</tr>
<tr>
<td>Mean Attempted Credits</td>
<td>14.75</td>
<td>14.83</td>
<td>14.61</td>
<td>14.82</td>
<td>15.32</td>
</tr>
<tr>
<td>HS Academic GPA</td>
<td>3.46</td>
<td>3.55</td>
<td>3.58</td>
<td>3.54</td>
<td>3.60</td>
</tr>
<tr>
<td>Academic Index</td>
<td>203.0</td>
<td>208.0</td>
<td>213.3</td>
<td>212.1</td>
<td>222.0</td>
</tr>
<tr>
<td>1x/FT UA Yr 1 GPA</td>
<td>2.72</td>
<td>2.76</td>
<td>2.82</td>
<td>2.78</td>
<td>2.82</td>
</tr>
<tr>
<td>1x/FT Not Earning 2.00</td>
<td>23.1%</td>
<td>19.2%</td>
<td>16.2%</td>
<td>18.9%</td>
<td>15.6%</td>
</tr>
<tr>
<td>1x/FT Retention</td>
<td>80.2%</td>
<td>81.9%</td>
<td>83.1%</td>
<td>83.5%</td>
<td>84.7%</td>
</tr>
</tbody>
</table>
What is the state of teaching infrastructure? What mechanisms are in place for sustaining this instrumentation at a state-of-the-art level? Do faculty feel they have the infrastructure they need to achieve their teaching objectives optimally?

How are fundamental college-level intellectual abilities developed and assessed?

These and other questions suggested the need for a study that could identify and document how faculty and students individually and jointly experience learning assessment; that could identify successful assessment practices as well as those that could be improved; that could recommend new practices and standard data gathering and assessment strategies in order to institutionalize successful practices; and that could establish a baseline of the state of the institution's teaching resources and use it in planning for the future.

One established methodology for gathering information to answer these questions is to use a mixed method approach, collecting both quantitative and qualitative data on practices and perceptions of students and faculty through the use of surveys. Because the university community is very large, complex and frequently surveyed, it was decided that a purposive sample of academic units as case studies would produce examples of what the university, as a whole, is doing to address the issues raised by the working team. To grasp the breadth and depth of the university activities, participating units were selected to be representative of a wide class of units. Selection parameters included enrollment, number of faculty, need for specialized accreditation, main or branch campus, discipline, number of transfer students, and diversity. Table 3 shows the departments/units that were invited to participate. In some departments, such as Spanish and Portuguese and Chemistry and Biochemistry, only the Spanish and Chemistry faculty and students were asked to participate. Within the department of Disability and Psycho-Ed Studies, the Special Education faculty and students were invited to participate.

Separate surveys were administered to students, faculty and administrators within each academic unit. This triangulation highlighted the differences in perception of the issues among the three groups. All 11 departmental representatives, 55 percent (n=147) of faculty and 36 percent (n=952) of students responded. Over 60 percent of the faculty respondents were Associate or Full Professor; 59 percent of the students were undergraduates and 39 percent were graduate students. Of the undergraduates, 64 percent were seniors and 59 percent were pursuing Bachelor of Science degrees. Of the graduate students, 72 percent were pursuing doctoral degrees.

Analysis of survey responses reveals that departments are collecting data for use in program level assessment. The department heads and faculty respondents generally perceive the use of comprehensive exams, exit surveys, and capstone projects and courses as the primary data collection tools for program-level assessment. To a lesser degree, pre- and post-tests, portfolios, and embedded questions are good data sources. Some departments reported using alumni surveys and annual alumni newsletters to track students after completion in their programs, although this was more common for graduate than undergraduate student alumni.

In retrospect and of use for possible future case studies, the survey instrument did not yield much data useful for determining how departments use...
the collected data to make changes in instruction, curriculum, or other opportunities for student learning. Ninety percent of the department heads, faculty, and students indicated that course exams were the primary tools used to determine whether students were ready for future courses in degree programs. It is thus possible that the focus of program level assessment is a primarily summative, rather than formative, assessment of student learning. If this is the case, it represents an important, but challenging, finding. The UA is committed to helping departments include more embedded assessments throughout programs, for example, to generate information that can be used to adjust instruction and curriculum at particular points within programs.

Finally, analysis of the survey responses indicate that the majority of students perceive genuine faculty interest in their learning and their advancement in future careers. Students reported that faculty engaged them in teamwork activities, writing in the discipline, and seminars and colloquia to prepare them for future work in the discipline. With a few exceptions, faculty respondents were positive in their perceptions of sufficient classroom and teaching lab space and resources to support their students’ learning, with mixed results on perceptions about sufficiently state-of-the-art levels of instructional technology. The results from the survey are summarized in Table 4.

The Case Study provided evidence that assessment results are being used to improve programs. For example, faculty members in the Accounting Department meet at least once a year with representatives from the 20 firms that consistently recruit graduates in order to obtain feedback regarding the graduate’s ability to succeed in the workplace. Faculty also obtain feedback on trends in the field and on suggested changes in the curriculum. The Spanish Department monitors responses from graduates and uses them to make changes in undergraduate and graduate courses after consultation with relevant committees. The change to make the curriculum more culture-centered was based largely on a survey of student career paths. In UA South’s Commerce Department, more students are now going into public administration; this shift has led to plans to work more closely, or merge, the Commerce Degree Program (BS) with the Supervision Program (BAS).

Assessment of General Education

The current UA university-wide General Education program became operational in 1998. It was developed to provide students with knowledge, skills and attitudes that are the foundation of life-long learning, personal development and social responsibility. A description of the program, including requirements, learning outcomes, and structure, can be found at the General Education website.  

One of the first real assessment efforts was “A Review of the University of Arizona’s General Education Program: Fall 1998 through Spring 2003,” prepared by the University-wide General Education Committee. The committee concluded

“...They (the faculty) are ALWAYS available and willing to help you overcome any struggles you are having with your course work. They are also very encouraging in helping you get a career lined up for after graduation. You always feel like your professors really want to be there, get to know you, and help you with anything you need. Their enthusiasm is so encouraging you can’t help but want to excel in both your academic and professional lives.”

Undergraduate major in Accounting from the Assessment Case Study

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>ACCT</th>
<th>ANTH</th>
<th>CHEM</th>
<th>COMM</th>
<th>ECE</th>
<th>PSID</th>
<th>DNC</th>
<th>SWES</th>
<th>SPAN</th>
<th>SPED</th>
<th>UA South</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example of feedback loop</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Multiple Assessment Tools</td>
<td>Faculty</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Dept</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Track Performance in follow-on courses</td>
<td>Faculty</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Dept</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Students Prepared?</td>
<td>Faculty</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y/N</td>
<td>Y</td>
<td>Y/N</td>
</tr>
<tr>
<td>Dept</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Enough human resources</td>
<td>Faculty</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<td>n/a</td>
</tr>
<tr>
<td>Dept</td>
<td>N</td>
<td>N</td>
<td>n/a</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

1 Provided by Department heads in open ended questions
2 Reported ‘mandatory’ or ‘consistent use’ of three or more assessment tools at the undergraduate level
3 Reported ‘adequate’ on a least two tenured faculty categories

Table 4. Case Study Departments and Selected Unit and Faculty Survey Results
that the program served the fundamental needs of students, and the program objectives were not disputed or recommended for change. This was followed by the 2005 release of the Report and Recommendations of the UA General Education Review Committee of 2004-2005, which recommended continuation of the basic structure and overall learning objectives of the program but also urged several revisions and modifications of the program’s parameters and organization. These recommendations were based heavily on student comments about its effectiveness, as conveyed through special questions added to the Teacher Course Evaluations for General Education classes. In response to this report, some of the changes introduced by the General Education Committee were implemented over the next two years. These changes included the creation of a more regularized review process for Tier One and Tier Two courses; the approval of a pilot trial for incoming honors students to enhance their general education experience; and the approval of revised undergraduate second language options.

In 2007 and 2008, the General Education Committee continued to respond to the assessment results of the 2005 report by improving the clarity of expected outcomes for all university-wide General Education courses; developing improved procedures to ease and facilitate submittal of courses for inclusion into the curriculum; and working with the Faculty Senate Task Force to place the General Education Committee more under the governance of the Faculty Senate and the Undergraduate Council, among other actions.

In 2008 the Faculty Senate General Education Task Force sought to examine the previous assessment reports and evaluations of the course offerings; to design mechanisms to measure and ensure quality and cost effectiveness of the program; to recommend actions to provide greater access and choice of courses; and to review current rules and procedures on the substitution of General Education courses.

Overall, the Faculty Senate General Education Task Force found that the program had improved student mobility between majors, created teaching and learning opportunities that recognized diversity, strengthened writing proficiency (although financial issues might begin to deteriorate these gains in the amount of writing in General Education courses), and increased course availability, but not necessarily course choice. In the main, the task force did not question the goals, curricular content or student outcomes of the courses. The task force did find that funding the program remained a difficult administrative problem, which has since been addressed, at least in part, by the recent reorganization of the Colleges of Letters, Arts and Science. The task force also found that more full-time instructors should be encouraged and incentivized to teach these courses and that General Education assessment should become multifaceted and ongoing.

In Spring 2008, the Assessment Coordinating Council carried out a General Education Pilot Study. Twenty-six faculty members participated in the study. For the most part they felt the student outcome goals of General Education courses were very important, but felt also that students lacked critical thinking skills and that their writing was too often of poor quality when they entered the university and, in many cases, when they moved from Tier One to Tier Two courses. Faculty felt that most of the courses evaluated critical thinking skills only through writing assignments, mainly term papers. However, most faculty members assessed students’ critical thinking skills through in-class discussions and different types of writing assignments.

Periodic course reviews were begun in 2008 for General Education offerings. Syllabi and Teacher Course Evaluation (TCE) data were reviewed for 21 randomly selected Tier One courses. Only three courses did not appear to be in compliance of the Tier One learning goals from the syllabi, but they were found to meet the standards after consultation with the instructors and none were removed from the curriculum. The TCE responses were compared to all lower division courses and did not appear to be significantly different for questions about how much was learned, how much time was spent on the courses, and how difficult the courses were.
Chapter 4: Criterion Three

Another 20 courses were chosen at random and were evaluated in 2009-2010. This time, in addition to the syllabi and TCE scores, instructors were interviewed by two members of the University-wide General Education Committee. Questions included, for example, “How do you teach critical and evaluative thinking in your class?”

Questions about students’ General Education experience also have been included in surveys of graduating seniors since 2005. In general, students do not see their General Education courses as a stand-alone part of the curriculum. However, they feel the General Education courses broadened their world perspective, inspired them to learn outside of their major, and garnered their interest. There are also questions concerning the individual Tier One content area goals on the TCE questionnaires. These have not yet been quantified for all General Education courses, although they have become part of the periodic course reviews.

**Student Surveys and Placement Exams in Foundations Courses**

The College of Engineering uses a Survey of Graduating Seniors, which it considers a critical source of data for evaluation by the Accreditation Board for Engineering and Technology (ABET). The College of Agriculture and Life Sciences (CALS) uses the survey to assess how much students have changed in six critical areas of human development, including working with others, demonstrating intellectual flexibility, and understanding global and societal relationships.

Placement exams are used extensively in foreign language courses and mathematics. The mathematics example is provided above under “Examples of Closing the Assessment Loop.” Foundational study in foreign languages (FL) is found in the colleges of Social and Behavioral Sciences, Humanities, Education, although the majority are offered through the College of Humanities. The College of Humanities serves more than 9,000 students in lower-division language study each academic year. Two prominent examples of placement testing are in Spanish and French. All students who want to study Spanish and have taken Spanish in high school take the Spanish Computer Adaptive Placement Exam (CAPE), developed at Brigham Young University, to determine proficiency. A special exam has been developed to test “heritage learners” of Spanish; the UA has one of the oldest programs for heritage learners in the country. The university has established cut-off exam scores to reflect performance by students enrolled in the Spanish basic language program. In French, freshmen students are placed through CAPE testing; students who place at the junior level in French meet with faculty advisors to fine-tune placement through oral interviews. Proficiency levels in French courses are defined by professional associations, and the linguistic objectives for each course are normed to national standards that are essentially a soft version of proficiency as defined by the American Council on the Teaching of Foreign Languages.

**Graduate Education**

UA graduate programs are internationally recognized and distinguished by their interdisciplinarity. The strength of these programs is reflected in the large number that are nationally ranked by such organizations as the National Research Council, Chronicle of Higher Education, Council of Graduate Schools, and the Association of American Universities Data Exchange. U.S. News & World Report ranks the university’s management information systems, entrepreneurship, doctor of pharmacy, audiology, speech language pathology, rehabilitation counseling, analytical chemistry, geology, and social psychology programs in the top 10 nationally, with geology most recently ranked in a tie for best in the nation by the magazine. From 2004 through 2008, the UA ranked third nationally in the awarding of doctorates to Native American students and eighth for Hispanics. In 2009, the publication Hispanic Business ranked the UA College of Medicine ninth in the country in serving Hispanic students.
One of the strengths of UA graduate education is its 14 graduate interdisciplinary programs (GIDPs), as shown in Table 5 (see also Criterion Four).

These programs offer a variety of degrees and certificates, including Ph.D. majors and minors, MS, MA, PSM, and graduate certificates. The university’s GIDPs are structured around committees of faculty whose tenure lines reside in various traditional departments, but whose interests transcend departmental boundaries, resulting in cutting-edge teaching and research. The high value placed on interdisciplinarity reflects the UA’s commitment to fostering innovation and creativity among faculty and students.

Because these programs lack a traditional departmental center, the Graduate College houses a central unit to coordinate the programs, to distribute resources, and to provide support for fund-raising, curriculum, recruitment, annual reviews, academic program reviews, and so on. An elected faculty board, the Graduate Interdisciplinary Programs Advisory Committee (GIDPAC), advises the central unit and the dean of the Graduate College on policy matters. Until 2009, the GIDP administrative office was coordinated by a full-time administrative professional. In 2010, after a review by GIDPAC, it was determined that this central office could more efficiently meet the financial, curricular, and programmatic needs of the various GIDPs if it were directed by a member of the GIDP academic community. With an eye to these particular needs, a faculty member from Linguistics and the Second Language Acquisition and Teaching and Cognitive Science GIDPs was recruited to take on this role in a part-time capacity in April 2010.

Graduate programs at the UA have a commitment to formative and summative evaluation. In 2009, for example, the Graduate College undertook a review of all graduate programs. Data included completion rates, time to degree, diversity, acceptance rates, and entering GPAs. Academic deans provided analyses, and a subcommittee of

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**Table 5. UA Graduate Interdisciplinary Programs (GIDPs)**

<table>
<thead>
<tr>
<th>Graduate Interdisciplinary Programs:</th>
<th>Year Established</th>
<th># Current Students F2009</th>
<th># Current Faculty</th>
<th>MASTER</th>
<th>DOCTOR</th>
<th>MINOR</th>
<th>Unique to UA?</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian Studies Program</td>
<td>1982</td>
<td>114</td>
<td>31</td>
<td>234</td>
<td>18</td>
<td>19</td>
<td>N</td>
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<tr>
<td>Applied Mathematics</td>
<td>1976</td>
<td>63</td>
<td>39</td>
<td>180</td>
<td>134</td>
<td>61</td>
<td>N</td>
</tr>
<tr>
<td>Arid Lands Resource Sciences</td>
<td>1964</td>
<td>35</td>
<td>17</td>
<td>1</td>
<td>44</td>
<td>22</td>
<td>Y</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>1997</td>
<td>38</td>
<td>38</td>
<td>18</td>
<td>21</td>
<td>13</td>
<td>N</td>
</tr>
<tr>
<td>Cancer Biology</td>
<td>1988</td>
<td>43</td>
<td>61</td>
<td>6</td>
<td>57</td>
<td>51</td>
<td>N</td>
</tr>
<tr>
<td>Cognitive Science</td>
<td>1990</td>
<td>-</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Genetics</td>
<td>1964</td>
<td>14</td>
<td>41</td>
<td>32</td>
<td>22</td>
<td>41</td>
<td>N</td>
</tr>
<tr>
<td>Global Change</td>
<td>1994</td>
<td>18</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Entomology &amp; Insect Science</td>
<td>1994</td>
<td>10</td>
<td>28</td>
<td>1</td>
<td>16</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>1988</td>
<td>27</td>
<td>46</td>
<td>9</td>
<td>51</td>
<td>63</td>
<td>N</td>
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<tr>
<td>Physiological Sciences</td>
<td>1989</td>
<td>68</td>
<td>64</td>
<td>103</td>
<td>76</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Remote Sensing &amp; Spatial Analysis</td>
<td>1975</td>
<td>20</td>
<td>27</td>
<td></td>
<td></td>
<td>120</td>
<td>N</td>
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<tr>
<td>Second Language Acquisition &amp; Teaching</td>
<td>1990</td>
<td>62</td>
<td>70</td>
<td>20</td>
<td>114</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Statistics</td>
<td>1992*</td>
<td>3</td>
<td>43</td>
<td>24</td>
<td>3</td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

* Re-established in 2006. Source: UA Office of Institutional Research and Planning Support

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“Each faculty member takes a personal interest in my development as a viable professional. They have all gone out of their way and far beyond their job descriptions to aid me in my studies and in my development as a future academic professional.”

Graduate student in Dance from the Assessment Case Study
the Graduate Council addressed college ratings and cross-college comparisons. The goal was to present the ratings to departments and allow them to close the feedback loop and improve their programs.

Recent National Research Council (NRC) data-collection requirements were also an incentive to significantly improve data gathering at the university, to allow comparison of programs to national trends, and to support graduate programs in their efforts to develop strategies for improvement. The Graduate College associate deans also consult with departments to establish strategies for improvement and ways to measure them. Data are now published online. In partnership with PeopleSoft, the Graduate College is developing GradTrack, which will facilitate paperless processing, increase efficiency and ensure that programs know the progress of each student. The Graduate College has completed the online application process, allowing each department to add its own application materials to the common application.

Assessment and clear articulation of student outcomes and goals go hand in hand. Assessment of milestone goals such as completion encourages programs to look closely at specific program requirements and opens the door to discussion of best practices. Since graduate education requirements vary dramatically, meaningful comparison can only be done within disciplines. For example, completion rate is a powerful measure because it is influenced by student skills and behavior, faculty mentoring, administrative effectiveness, financial support, and curriculum. Yet a very high graduation rate may reflect a low-quality program that is not challenging; similarly, a low completion rate may reflect a program with unusually high standards. Time to degree also necessarily varies by discipline. Field work in anthropology is known to result in longer time to degree, and clinical internships add time to clinical psychology degrees.

Programs need to set their own goals and measure their own performance against similar programs in peer institutions. Toward this end, an associate dean and the Graduate College institutional researcher visited departments with low completion rates and high time to degree, asking them to determine what would be appropriate rates and consulting with them to help them move toward their goals. In almost all cases, the need for clearer articulation of expectations and learning goals was recommended. The UA Graduate College now requires departments to link to their departmental Satisfactory Academic Progress Guidelines from the Graduate College Program Guide (part of the online graduate catalog). An associate dean reviews these and offers suggestions for improvement.

The Graduate College also has focused assessment on particular academic problems that may be delaying students’ progress, such as excessive numbers of “incomplete” grades. The student who consistently takes an incomplete gets farther behind each semester. Prior to 2005, there were about 1,500 graduate incompletes per year, with clear patterns. Individual students often had multiple incompletes and numbers of incompletes varied by discipline, with more in the humanities. Graduate College staff met with representatives of programs producing many incompletes, reminding them of the UA policy that they only be given at the end of the semester when an emergency prevents completion and counseling them on better ways to structure assignments. Graduate College staff also counseled individual students who are in academic difficulty. As a result, there has been a 50 percent decrease in incompletes since 2006, and fewer lapsed incompletes resulting in “E” grades.

“My Chair and Committee have all been actively involved in my doctoral journey. They have all been a part of my learning environment, encouragement, and support. They have gone above and beyond to keep me informed of current events, issues and policy.”

Graduate student in Disability and Psychoeducational Studies from the Assessment Case Study
The Graduate College also uses assessment results to improve processes, taking a more proactive stance with regard to student problems. For example, in the case of incompletes, the Graduate College now sends reminder emails to students and their department. Policy changes have addressed other problems resulting in, for example, an Academic Renewal policy for graduate students and a more flexible time-to-degree policy. In 2009 a “Temporary Assignment of Duties” policy was created for Graduate Assistants with infants. A more extensive effort is underway to provide funding for family leaves. The Graduate College has worked to improve communication with departments through more meetings with graduate directors and coordinators; data sharing is a key component of these meetings. Other changes have led to better management of graduate committees, decreased processing time for transfer credit, and other streamlining.

With the new UA student information system coming, it has been possible to be more explicit in terms of the requirements of individual programs. It is now possible to include data in the advising module so that students can track their progress against their major. This includes unique milestones as well as course requirements. The Graduate College website has been significantly improved so that students and advisors have access to MyGradColl which gives them up-to-date information about student progress, Satisfactory Academic Progress Guidelines, and program requirements. Traffic on the Graduate College website has increased 31 percent in the last two years.

Core Component 3a: Summary

The university has provided coherent, consistent communication about student learning outcomes and has helped make effective assessment possible through regular, well-attended workshops and showcases on assessment. A well-supported website links to student learning outcomes for both undergraduate and graduate programs and provides evidence that the assessment loop is closed. An 11-unit Case Study revealed a wide range of assessment efforts in different academic settings. The university provides clear goals for General Education and Foundations learning outcomes. Graduate education assessment has been a particular emphasis in the 10 years since the last accreditation site visit.

Core Component 3b:

The organization values and supports effective teaching.

The University of Arizona Values Effective Teaching

The university values effective teaching through policies and procedures and numerous awards at the department, college, and university levels. For example, for more than 15 years the College of Science has had in place promotion and tenure procedures that allow promotion to associate and full professor on the basis of scholarly contributions to science and mathematics education.

At the university level, awards include the prestigious University Distinguished Professorship with a $5,000 change in base salary, up to three Henry and Phyllis Koffler Prizes of $10,000, up to two Provost’s General Education Teaching Award of $2,500, and the University of Arizona Foundation Leicester and Kathryn Sherrill Creative Teaching Award of $2,500.

The Five Star Faculty Award, sponsored by the Honors College, is the only university-wide teaching award with nominations and winners selected exclusively by students. The purpose of the award is to recognize excellence in undergraduate teaching. First awarded in 1983, the award maintains a rigorous selection protocol, which includes student and committee observations, interviews and examination of philosophy and teaching materials from the nominees to evaluate every facet of the teacher-student relationship. The award comes with a $1,000 prize.

At the University of Arizona, faculty have responsibility for the curriculum, with significant administrative support for its delivery. The UA faculty
governance structure includes the Faculty Senate and Undergraduate and Graduate Councils that bring policy initiatives to the Faculty Senate. There is also a University-wide General Education Committee that is charged with the review and approval of General Education courses across the university. Establishing General Education policy is now the responsibility of the Undergraduate Council. For more information on Faculty Governance, please see Criterion One on Mission and Integrity.

The University of Arizona Supports Effective Teaching

Office of Instruction and Assessment
An example of the university’s consistent, coherent communication on the value of assessment is the restructuring of the central administration around issues of instruction and assessment following a June 2009 Taskforce on Undergraduate Education report. The taskforce recommended physical moves and administrative reappointments of the professionals in the University Teaching Center and the Learning Technology Center and of the Director of Assessment. The Office of the Provost created the Office of Instruction and Assessment (OIA) in January 2010 to support faculty in instruction and assessment. The OIA offers workshops, online and face-to-face classes, showcases, one-on-one consultations, class observations for instructors seeking advice, coaching in effective online or face-to-face course design, support for the university’s main course management system (D2L), and development of media and web-based applications for teaching and research. Staff members have significant expertise in the areas of assessment, student learning, and effective pedagogical practices. OIA staff members also have expertise in new media such as blogging, online conferencing, podcasts, video productions, and website design. OIA can also provide departments with advice and assistance in developing their program level assessment systems.

The OIA currently has responsibility for the university’s Graduate Assistants in Teaching Orientation (GATO), the Teaching Assistants Training On-line (TATO) program, and a Certificate in College Teaching (CCT), which is expected to be approved as a formal graduate certificate program at the UA. In its first month of operation, the OIA developed and implemented a small-grant program funded by the Arizona Board of Regents to leverage lessons learned from earlier course redesign projects on campuses across the state. OIA helped assemble a new educational technology working and sharing group called LATTe, for Learning and Teaching with Technology, with 50-plus staff, instructors, and faculty from across the university. In August 2010, the OIA launched the UA New Faculty Orientation and offered its first day-long Teaching Academy for new and returning faculty interested in starting the school year with fresh ideas for teaching. In academic year 2010-2011, the OIA expects to assume responsibility for the university’s teacher and course evaluation (TCE) process that is currently under the Office of Institutional Research and Planning Support; to receive approval for a new graduate Certificate for Educational Project Evaluation; to implement an OIA Faculty Fellows program providing two faculty members per year with professional development and scholarly experiences related to teaching, learning, and assessment; and to create an OIA Advisory Board with faculty representatives from colleges across the university.

Case Study Evidence of Support for Effective Teaching

The university supports effective teaching both directly and indirectly. Indirectly, the university provides a wide range of student support programs that are available for faculty referral of students, from academic advisors to tutoring to career services and ethnic minority student affairs centers. The Case Study faculty instrument revealed that 47 percent or more of the responding faculty referred students to academic advisors, undergraduate coordinators, the Dis-
Chapter 4: Criterion Three

ability Resource Center, tutors and preceptors, or the Writing Center, respectively, and that they had very positive experiences with these services, as shown in Table 6.

The university also supports effective teaching directly through a variety of support services aimed at instructors. At the time of the Case Study surveys, many of these services were provided by the University Teaching Center (UTC) and the Learning Technology Center (LTC), both now reorganized as part of the Office of Instruction and Assessment as described above. In the Case Study surveys, almost all department representatives said they recommend these services and find them useful. In the faculty surveys, nearly two-thirds of the faculty used library online resources. Surprisingly, faculty reported little usage of the Learning Technologies Center, perhaps reflecting lagging adoption of online technologies by most instructors. Faculty found the most teaching support services both accessible and useful. Results of the faculty surveys are summarized in Table 7.

**Disability Resource Center**

Students with disabilities have needs that must be addressed for effective teaching to take place. The university’s Disability Resource Center (DRC) determines the need for, and provides or arranges, reasonable accommodation. It also offers competitive athletic opportunities, physical support, and disability-related programs, and provides training and consultation to the campus community. Over the last 10 years the DRC has evolved into a national leader in moving from compliance to furthering social justice.

Since 2000, the number of students registered with the DRC has grown from 750 to 1,900. First-year retention of disabled students exceeds that of the overall UA population. New full-time freshmen in Fall 2008 showed a 93.64 percent return rate in Fall 2009. Four-year graduation rates, however, are lower than the general UA population but approach the general UA rate after six years. The four-year graduation rate of the class entering in Fall 2005 was 28.46 percent, while the six-year graduation rate of the Fall 2003 incoming class was 55.26 percent. Additionally, the DRC now serves disabled faculty and staff. In 2005, the DRC moved into a state-of-the-art facility that houses 35-plus professional staff, an adaptive technology lab, a testing center, and a gym. The facility is frequently cited by other colleges and universities as one of the finest in the country. The adaptive athletic program is the largest in the country, with 76 athletes competing on five competitive sport teams and more than 125 individuals using the adaptive fitness gym. The DRC has continued to develop technology in testing, document conversion, and interpreting. In 2008, the center received a federal grant to develop a disabled veterans reintegration and education project.

![Journalism students are provided with many opportunities for hands-on experience. (Photo by John deDios)](image-url)
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The Strategic Alternate Learning Techniques (SALT) Center

The SALT Center\textsuperscript{20} boasts a national reputation as one of the most comprehensive academic support programs available at the postsecondary level for students with learning challenges. It has an active alumni and parent community that supports developmental goals for student scholarships. Since the last NCA reaccreditation visit, SALT has moved into a privately-funded, 16,000 square-foot facility, specifically designed around students’ unique strengths and challenges. SALT offers innovative student programs and services that engage students in the learning process and empower them to take ownership of their academic goals. Academically, SALT students perform higher than predicted, based on their incoming characteristics, and they graduate at rates comparable to other UA students. For example, 68 percent of students in the lower band of the UA's academic index are retained at the end of their freshman year, but SALT students in the same academic index band have a 79-percent retention rate. Overall SALT freshman retention rates over the last 10 years have been approximately 75 percent, but declined to 68 percent for the incoming class of 2008. Analysis of this is ongoing, but preliminary hypotheses include the recent economic downturn, plus the fact that more than 85 percent of SALT students are non-resident compared to the university average of about one-third. Men comprise 60 percent of SALT students, compared to 48 percent for UA students overall, and male students typically have lower retention rates than female students. Also, increasing non-resident tuition costs may have a larger impact on students who are borderline in terms of academic standing (2.0 cumulative GPA) after their first year.

Table 7. Case Study Faculty Responses to Questions about UA Teaching Support Services. The University Teaching Center (UTC) and the Learning Technologies Center (LTC) were reorganized in 2009 as part of the Office of Instruction and Assessment.

<table>
<thead>
<tr>
<th>(N=146)</th>
<th>Accessibility</th>
<th>Use</th>
<th>Recommend</th>
<th>Yes</th>
<th>Uncertain</th>
<th>No</th>
<th>Usefulness</th>
<th>Useful</th>
<th>Uncertain</th>
<th>Not useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTC Workshops</td>
<td>20.6%</td>
<td>22.6%</td>
<td>53.1%</td>
<td>44.9%</td>
<td>2.0%</td>
<td>57.2%</td>
<td>36.7%</td>
<td>6.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTC Consultants</td>
<td>9.6%</td>
<td>10.3%</td>
<td>45.4%</td>
<td>54.6%</td>
<td>0.0%</td>
<td>44.8%</td>
<td>48.3%</td>
<td>6.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTC Certificate in College Teaching</td>
<td>2.1%</td>
<td>4.8%</td>
<td>29.2%</td>
<td>70.8%</td>
<td>0.0%</td>
<td>22.7%</td>
<td>68.2%</td>
<td>9.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated Learning Center</td>
<td>21.9%</td>
<td>21.9%</td>
<td>66.0%</td>
<td>32.0%</td>
<td>2.0%</td>
<td>68.0%</td>
<td>32.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTC Assessment and Evaluation</td>
<td>5.5%</td>
<td>5.5%</td>
<td>30.8%</td>
<td>69.2%</td>
<td>0.0%</td>
<td>27.3%</td>
<td>63.6%</td>
<td>9.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTC Instructional Design</td>
<td>4.8%</td>
<td>4.1%</td>
<td>34.6%</td>
<td>65.4%</td>
<td>0.0%</td>
<td>31.8%</td>
<td>68.2%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTC Instructional Tools</td>
<td>11.0%</td>
<td>8.9%</td>
<td>53.3%</td>
<td>46.7%</td>
<td>0.0%</td>
<td>58.6%</td>
<td>41.4%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTC Development Facilities</td>
<td>2.7%</td>
<td>3.4%</td>
<td>19.1%</td>
<td>80.9%</td>
<td>0.0%</td>
<td>11.1%</td>
<td>83.4%</td>
<td>5.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library Instructional Services</td>
<td>30.1%</td>
<td>27.4%</td>
<td>70.2%</td>
<td>29.8%</td>
<td>0.0%</td>
<td>77.8%</td>
<td>20.4%</td>
<td>1.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library Online Resources</td>
<td>63.0%</td>
<td>52.1%</td>
<td>90.2%</td>
<td>8.7%</td>
<td>1.1%</td>
<td>93.9%</td>
<td>5.1%</td>
<td>1.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The professors are not only our teachers but our mentors. They put in the effort to teach us everyday and rehearse us until 9 pm every night. The amount of artistry, technique, and athleticism they demand shows how much they care about our well being and improvement.”

Undergraduate major in Dance from the Assessment Case Study
Academic Advising

An Academic Advising Task Force (AATF) that was established in January 2001 led to 36 recommendations in 2002, all approved by then-President Likins and implemented with a $1.5 million continuing funding stream from increasing tuition, supported at that time and afterward by student leadership. A fundamental change to come out of the AATF has been the establishment of a college-based service model, including several new college advising offices and 42 new full-time professional advising positions across the university. The distribution of new advisors was determined by student census data and a recommended advisor caseload. The Advising Resource Center (ARC) was created in 2003 to provide coordinated support for academic advising.

These changes in academic advising also have affected the way undergraduate policy is reviewed and revised. More academic advisors now serve on departmental curriculum or academic affairs policy committees. The Undergraduate Council and other faculty governing groups now regularly consult with the advising community when considering academic policy matters. As part of the AATF recommendations, the University Academic Advising Council (UAAC) was established in 2004, with advisement directors from each college offering undergraduate degrees. An example of the role of academic advising in undergraduate policy involves the eight-week drop policy, which states that “only in extenuating circumstances” can a student drop a class after the eighth week, leaving some latitude for interpretation. The UAAC found that “extenuating circumstances” was broadly defined across colleges and most, but not all, colleges gave a one-time “pass” for the first-time freshman student. The UAAC supported this interpretation, which has led to a much more consistent implementation of the eight-week drop policy that is more equitable for students.

While the UA has adopted a strong college-based service model for delivery of academic advising, it has not overlooked the value and efficiency of centralized services. For example, students pursuing a post-graduation professional program in law or medicine are studying within a wide variety of disciplines and are more effectively served through a central resource that specializes in the topic area. The UA supports both a Pre-Health Professions and a Pre-Law Advising Office, each located within the Center for Exploratory Students, which specializes in serving a wide range of student populations, including exploratory students and students in transition from one degree program to another. The center also manages the Interdisciplinary Studies degree program.

Assessment of academic advising was a central recommendation of the AATF. In 2007 the UAAC developed an e-mail survey that is sent to students following an appointment with an academic advisor. To date there is a 15.85 percent response rate, or 12,867 responses from 81,185 surveys sent, with an average 4.68 rating on a 5 point Likert scale. Also in 2007, the Provost commissioned a campus-wide Academic Advising Program Review that included review by the National Academic Advising Association (NACADA). Key findings in their final report include confirmation that a strong college-based advising structure is appropriate for an institution the size and complexity of the UA. The NACADA team also concluded that the formation of the University Academic Advising Council group and the creation of the Academic Resource Center were the most forward-thinking outcomes of the Academic Advising Task Force. In Spring 2010, the Vice Provost for Academic Affairs charged the AATF II to develop assessment protocols for learning outcomes related to advising, with a report expected in academic year 2010-2011.

Teacher Course Evaluations

Founded in 1993, the UA Teacher-Course Evaluation (TCE) system yields student ratings of instruction on more than 85 percent of the university’s courses each year. Approximately 85 percent are administered on paper, the rest online. TCE data are a mandated element of annual, promotion, and tenure reviews. Every course participating in the system receives feedback on students’ perceptions of overall teaching effectiveness and key course elements such as course materials, class climate, time spent on course
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and difficulty, along with a variety of demographic items to support deeper analysis. The TCE system also offers faculty and graduate teaching assistants optional suites of questions specific to instructional formats, such as lecture, lab, discussion, seminar, studio, or online instruction. Faculty also may select or create custom questions. These additional items are designed to provide formative feedback for course and teaching skills evaluation and are reported confidentially to faculty only to encourage probing of potential problem areas. A number of academic units also have created additional item sets reflecting their specific instructional concerns. Both the English Department and the General Education Program have added a set of additional items to monitor compliance with key instructional goals and requirements related to writing.

The TCE system is currently undergoing a re-engineering of its website and software applications in order to ensure alignment with the new central data systems on which it depends for course information. The item bank and questionnaire collection are also being updated to reflect recent and emergent instructional methods and modalities. For example, the Fall 2010 roll-out of the new system will offer faculty optional items based on learning-centered education practices, collaborative and cooperative instruction, problem-based learning, and a variety of learning technologies-related tools and instructional issues. The new system also will support a wider range of teaching team configurations to ensure feedback about individual team members as well as the team as a whole. Although existing questionnaires and reporting formats will continue into the fall for continuity, new web technologies will afford dramatic improvements in user interfaces, including support for aggregating and analyzing ratings data for program and course evaluation purposes.

The UA requires three to five years of student evaluations of instruction to be included in annual reviews for all faculty. About 85 percent of academic departments use data from the TCE survey as their source for student evaluations of teaching.

To assist faculty and administrators with interpretation of TCE data, a special graphic report is provided for each core (mandatory) item. The report shows how results for each class and the instructor’s average results compare to data obtained in similar courses based on class level, course subject (CSUB), and class size. The figure below illustrates how results for the “overall teaching effectiveness” item in nine undergraduate course-sections taught by a professor compares with other CSUB courses. This approach has been shown to dramatically increase the

Figure 1. Graph of Overall Teaching Effectiveness

### DOE, JOHN Q. - LOWER DIVISION UNDERGRADUATE COURSES (CSUB)
Analysis of Overall Teaching Effectiveness

<table>
<thead>
<tr>
<th>COMPARISON GROUP</th>
<th>INSTRUCTOR'S SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSUB Courses Only</td>
<td>The instructor's sample includes all sections taught by the instructor with valid TCE results that meet the comparison group criteria. Information and statistics are given only if there are at least 5 sections.</td>
</tr>
<tr>
<td>Lower Division Undergraduate Courses</td>
<td></td>
</tr>
<tr>
<td>Lecture, Seminar, Colloquium (3 total only)</td>
<td></td>
</tr>
<tr>
<td>Taught during the past six years</td>
<td></td>
</tr>
<tr>
<td>For each enrolled, 3 or more responses per section</td>
<td></td>
</tr>
<tr>
<td>Number of Sections: 25</td>
<td>Number of Sections: 15</td>
</tr>
<tr>
<td>Student Responses: 625</td>
<td>Student Responses: 355</td>
</tr>
<tr>
<td>Mean: 4.4</td>
<td>Grand Mean: 4.4</td>
</tr>
<tr>
<td>Standard Deviation: 0.3</td>
<td>Standard Deviation: 0.4</td>
</tr>
<tr>
<td>95% Confidence Interval: (4.1 - 4.6)</td>
<td>95% Confidence Interval: (4.1 - 4.6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Mean (95% CI)</th>
<th>Overall Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2008</td>
<td>CSUB 201 - 001</td>
<td>4.4 (4.0 - 4.8)</td>
<td>18 / 11</td>
</tr>
<tr>
<td>F2008</td>
<td>CSUB 201 - 002</td>
<td>4.6 (4.0 - 5.0)</td>
<td>33</td>
</tr>
<tr>
<td>F2008</td>
<td>CSUB 201 - 003</td>
<td>4.4 (4.0 - 4.8)</td>
<td>57</td>
</tr>
<tr>
<td>F2008</td>
<td>CSUB 213 - 008</td>
<td>4.7 (4.1 - 5.2)</td>
<td>29</td>
</tr>
<tr>
<td>S2008</td>
<td>CSUB 213 - 007</td>
<td>4.0 (3.0 - 5.0)</td>
<td>20</td>
</tr>
<tr>
<td>S2008</td>
<td>CSUB 213 - 002</td>
<td>4.6 (4.0 - 5.0)</td>
<td>17</td>
</tr>
<tr>
<td>S2008</td>
<td>CSUB 213 - 003</td>
<td>4.8 (4.0 - 5.0)</td>
<td>33</td>
</tr>
<tr>
<td>S2008</td>
<td>CSUB 213 - 004</td>
<td>4.0 (2.0 - 5.0)</td>
<td>14</td>
</tr>
</tbody>
</table>

| OVERALL TEACHING EFFECTIVENESS SCALE: |
| What is your overall rating of this instructor's teaching effectiveness? |
| always effective | (5) sometimes effective | (3) rarely effective | (2) almost never effective | (1) |
| usually effective | (4) |

Key to Comparison Table:
- Confidence interval for section mean
- Confidence interval for comparison group mean
- Confidence interval for grand mean for Instructor's sections (printed only for samples with 5 or more sections)
ability of faculty and administrators to accurately assess whether results for an instructor’s sample of courses differed significantly from comparison scores obtained in similar classes.

Core Component 3b: Summary
The university demonstrates its value and support for effective teaching through university and college awards for teaching; through faculty governance of curriculum and policy at the undergraduate and graduate levels; and through support structures such as the Office of Instruction and Assessment and the Strategic Alternative Learning Techniques Center. The university’s 11-unit Case Study showed that faculty value UA support for effective teaching.

Core Component 3c: The organization creates effective learning environments.
Learning environments are impacted by who actually does the teaching and by opportunities in the classroom and beyond.

Who does the Teaching
UA students receive instruction from faculty of different backgrounds, including tenure and tenure-eligible faculty; instructors, adjunct, part-time and clinical faculty; and graduate students. Figure 2 shows how the number of student credit hours and the percentage of total student credit hours generated by these groups have varied over time. To their credit, tenure and tenure-eligible (TTE) faculty are teaching more student credit hours (SCH) than they have in the past. Because enrollments have increased, they now teach a smaller percentage of those hours. Other instructional faculty, including lecturers, professors of practice, instructors, and clinical, visiting and emeritus faculty are showing the greatest increase in SCH.

The UA sees variations over time with regard to who does the teaching. Figure 3 shows that, with some exceptions, the vast majority of colleges saw the ratio of non-TTE faculty increase from 1998 to 2008, changing from 34.7 to 43.2 percent across all colleges.

Direct faculty engagement in teaching is an essential element for student success. Changing demographics of who teaches UA students are important for the following reasons:
Faculty are responsible for the curriculum, and the decline in the percentage of the SCH provided by TTE faculty could be problematic.

TTE faculty are charged with creating new knowledge, and being able to bring this new knowledge to the teaching experience is potentially one of the major benefits to students of attending a research university.

The UA highly values and supports research experiences for undergraduates, much of which comes out of student interest and experience in the classroom. If TTE faculty teach a smaller percentage of student credit hours, fewer students are being exposed to research opportunities.

TTE faculty often are most able to help students prepare for their professional lives, from mentoring to writing letters of recommendation.

If non-TTE faculty are teaching a greater percentage of the student credit hours, then it is critical that the university offer those faculty meaningful career options, progressions and rewards.

**Opportunities in the Classroom**

**Class Size and Availability**

Before the 2008 recession, and with encouragement from the Arizona Board of Regents, the UA worked for nearly a decade to shrink average class sizes in order to better serve students. Data
from 2000-2001 and 2008-2009 show that the numbers of classes with enrollments in the ranges of 40 to 49, 50 to 99, and more than 100 have generally decreased, while the numbers of undergraduate classes in the ranges of less than 10 and 10 to 19 have increased. These numbers do not include mega-classes with enrollments of more than 1,000, created recently in response to financial pressures. In 2009 the Provost charged a task force with evaluating and potentially overseeing the teaching of large classes in Centennial Hall. Many years ago, the 2,400 seat hall was used for this purpose; recent improvements in instructional technology increase the usability of the hall for instruction.

The Vice President for Student Affairs, the Chief Information Officer, and the Vice Provost for Academic Affairs worked to improve instructional technology in the hall, provided support for teaching and course assessment techniques, and developed a student-mentoring program in one of the freshman classes. Three classes, with 800 to 1,200 students each, were taught in Fall 2009; four classes with 500 to 1,200 students each were taught in Spring 2010. Neither an assessment of student learning nor a detailed evaluation of costs and benefits of mega-classes is yet available, but students indicated in focus groups that there were significant challenges to learning in this environment. It is known that teaching in Centennial Hall improved seat availability in General Education courses, the primary type of course taught in the hall.

Assessment by the new Office of Instruction and Assessment indicates that student learning in Centennial Hall classes is highly dependent upon the instructor’s teaching style. Instructors who use engaging teaching strategies and frequent, in-class comprehension checks to motivate and hold a large group of students’ attention generally created learning environments in which those students could succeed. One recommendation is to carefully screen the Centennial Hall course instructors for personal teaching styles that are compatible with student-centered, feedback-rich activities embedded in lectures.

Despite some improvements in class size, challenges with respect to class availability remain. In the focus groups students repeatedly noted difficulties in getting the classes they need. In the words of one student, “Getting out of here in four years is very hard!!!!”

Classroom Technology

The Fall 2009 formation of mega-classes was made possible by, and increased the need for, new classroom technologies, supported at the UA by the Office of Student Computing Resources (OSCR) and Equipment Services in University Information Technology Services.

Clickers—devices allowing instructors to instantly aggregate individual student responses to questions asked in class—were introduced a few years ago in large introductory science classes. As of Fall 2009, they are required in at least 25 classes in introductory chemistry, astronomy, psychology, business, biology, humanities, geosciences and mathematics. The university is also using other advances in technology, such as podcasting, electronic whiteboards, and electronic discussions.

Even in a large lecture class, clickers help the instructor to determine when material needs review or further elaboration. Clickers can be used to assess learning in real time, to sample opinions and experience, to increase student engagement, and to strengthen student-teacher interaction. Beginning in Fall 2010, classes using clickers will use a common vendor, Turning Technologies. This may reduce the problem of students having to purchase multiple clickers for use in different classes.

In a survey of students in one large class, 72 percent found clickers favorable, 10 percent were neutral, and 18 percent rated them as unfavorable.

Chemistry compared two sections of introductory courses, one using clickers and one not, finding no significant difference in student performance, withdrawal rates and passing rates. Students in
the clicker class were favorable towards their use in large classes and mildly positive about their value in helping them to stay more engaged. However, they were neutral about whether clickers helped them learn more.

As the UA seeks to enhance the efficiency and reach of its academic offerings, there is considerable room for growth in distance learning.

Demographics, globalization and declining state support require new educational and financial models for traditional and distributed education enrollment growth. Consistent with its land-grant mission of service to all the people of Arizona, the UA will take a leadership role in distance education by providing more programs online and thereby offering new opportunities for curriculum enhancement. The UA has no intention of becoming a “distance education” hub, but instead is focused on the power of distributed education to create an entirely new education experience and impact.

In September 2009, as part of a substantial system architecture revision (see also Criterion Two), the UA created a Vice Provost for Outreach and Global Initiatives to oversee the branch campus of UA South and its satellites, distributed education and international affairs. The goals of this office are:

- Focused degree production for higher-impact enrollments: The UA is focusing on a narrow number of high-value, high-demand degrees to ensure it will have the capacity to increase distributed program enrollment to 10,000 students by 2020. This is the distributed

Distance Learning

Distance learning at the UA has grown substantially since 2003 (see Figure 4), particularly in graduate programs in Information Resources and Library Science and in Nursing. At the undergraduate level, distance-learning options are available in General Education courses such as Individuals and Societies and Natural Sciences. Courses at UA South represent a significant proportion of distance-learning enrollments.

*Figure 4. Student Credit Hours Delivered Electronically 2001-08*
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• The University of Arizona Experience: The UA is creating a distinct distributed learning environment to include industry-driven internships, capstone projects, service-learning opportunities, and distributed-research activities.

• True community college partnerships: The UA model will make use of the teaching and advising strengths of community college partners across the state to increase the rate of successful transfers from those colleges to the UA, and to significantly reduce the total cost to students of undergraduate education.

• A maximized teaching asset: The UA will effectively leverage the instructional expertise of its main campus and distributed faculty, whether they are living in the communities they serve, are teaching from the UA main campus, or are teaching between locations.

• Shared and reduced costs: By focusing on shared community resources and investments and by creating business efficiencies across UA academic units, the UA will deliver a high-quality educational experience to its distributed and off-hours students at a total annual cost that is significantly lower than main campus costs.

The Honors Experience

The Honors College offers two very effective and concrete learning environments for its students: the Slonaker House and the Honors Residence Halls. Formerly a residence hall and built in 1940, Slonaker House provides comfortable space for the Honors College and easy access to resources for students who receive advising there, meet or study in the courtyard or in the living room, use the computer lab, or attend classes in the seminar room. Slonaker House provides an intimate home for honors students on the large and sprawling campus and invites communal learning and intellectual exchange. In addition, three Honors Residence Halls currently house 630 honors students, providing a living and learning community for high-ability scholars. In Fall 2011 a new honors hall will open, housing 700 students in a facility that will include advising, meeting, and seminar space.

The Honors College First-year Program is a comprehensive initiative that aims at retaining high-ability undergraduates and enhancing their educational experience. The program elements include the Common Reading program, Paladins, the first-year colloquia, differentiated general education opportunities, and specialized advising. These elements are intellectually linked: The common reading book, chosen by students, is provided to all entering freshmen with online activities that begin in the summer before they arrive on campus. The common reading is the inspiration for the annual theme that connects the honors colloquia, general education courses and co-curriculum activities offered that year. “Ender’s Game” by Orson Scott Card, the common reading for Fall 2010, will address the question, what does it mean to be human?

Paladins is a course designed to aid honors students’ transition to the university by strengthening social, academic, and cognitive skills. Over 200 students are selected for the course based upon criteria identifying them as retention priorities. These honors students are advised in the first year by a specially trained advisor in the Honors College, in addition to the advising they receive in their academic department or college. The Honors Advising Specialist coordinates Paladins, monitors student progress through the first year, advises the first-year cohort, works with

"I see Ender’s Game as a story that explores the relationship between man, morals, and science. It asks if man can continue to develop technology responsibly, and if he is able to explore the final frontier of space in the future, will he be able to do so without greed?"

[Emily, Honors Freshman, 2010]
students on major selection, and coordinates a course offered in the spring semester, Academic Strategies for Honors Students, designed to assist students whose first semester put them in danger of being dropped from The Honors College.

Honors offerings include independent courses with differentiated content, offered only to honors students, as well as co-convened courses, in which some students in a given class complete complete honors content. Where honors coursework is not available, students may complete honors contracts in which they develop, with an instructor’s guidance, an honors challenge within a standard course. Math, English, Chemistry and Biology routinely offer honors sections of their basic foundation courses, with separate sections and differentiated instruction. Some departments—Psychology is perhaps the best example—have developed specialized and fully-realized honors programs for their majors, but in most departments across the campus honors courses outside general education are scarce.

Research is central to the educational experience of honors students. All students who graduate with honors engage in active research as a required part of their honors degree through the completion of the honors thesis, a two-semester, six-unit project supervised by a member of the faculty. Theses cover a very broad range of research across numerous disciplines and are conducted in traditional and less-conventional formats. Recent thesis titles include: “Enhancement of Platelet Activation and Aggregation by Erythrocytes: Role of Red Cells in Thrombosis”; “Economic Development of Senegal: The Impact of Microfinance on Entrepreneurial Activity”; and “Destination: Heaven—A Short Film.” In addition, each year the Vice President for Research allocates $40,000 to the Honors Undergraduate Research Grant fund. Undergraduates can apply for a stipend or other expenses needed for a personalized research endeavor. A review committee composed of faculty and students judges proposals. The 23rd Annual Honors Research Expo was held in February 2010, showcasing 25 undergraduate research projects.

Lack of honors courses, especially at the upper-division level but also in general education, is the single biggest challenge honors students face, and is a strategic focus for the Honors College. There has been a gradual but steady decline in the number of honors general education offerings, and independent honors courses in some majors have always been scarce. The Honors College is critical to the mission of the University of Arizona; it is central to academic excellence and its students enrich the campus and the curriculum and energize faculty. The Honors College also supports students applying for top national and international scholarships such as Rhodes, Gates-Cambridge, and Fulbright.

Growth in Honors enrollments advances the university in terms of the quality, diversity and size of the incoming class. Without adequate resources, the UA is in danger of losing its best students to increasing national competition for those students. The university approved a $250 fee in March 2010 for Honors students. The Honors College has no faculty positions and no budget for supporting courses in departments. The challenge is in prioritizing how to best leverage the fee dollars to provide additional Honor's opportunities in these areas:

**Honors Classes**
- 25 freshman Honors colloquia (1-unit courses)
- 10 interdisciplinary Honors seminars (upper division); the first-year goal is four to five
- Coordinator and GAT for new INDV Honors course “Place, Self and Social Community”
- GATs for Honors TRAD 104 “Quest and Critical Cultural Concepts”

**Advising**
- Addition of second Honors advisor
- Addition of program coordinator for first-year programs (advisor for undecided students, coordinator of Paladins course, and support for Honors faculty teaching freshmen colloquia)
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**Research**
- Undergraduate research grants – $15,000
- Honors thesis grants – $15,000

**Study Abroad** – $30,000

**Common Reading Program** – $20,000  
(books and activities)

**Honors Student Council Programs** – $6,000

In its 2007 Annual Report, the Honors College said its students are satisfied with their experiences in the college. Forty-two percent of honors students reported they interacted with Honors College staff, and they rated this experience 3.15 on a 4-point scale. Thirty-nine percent spoke with an Honors College advisor and this experience was rated 3.08 on a 4-point scale. Sixty percent of the students visited the college website and 76 percent received notices from the listserv. These two informational sources were rated 3.0 and 2.9 on the 4-point scale. Although used by fewer students, the Honors computer lab was rated highly at 3.35, serving 28 percent of honors students. Forum lunches were rated 3.2 and served 21 percent.

The College recently started a thorough analysis of the Survey of Graduating Seniors, segregating respondents by affiliation to the college. This study will provide very useful comparisons of the experiences of students in the Honors College and other students.

**Beyond the Classroom**

*Involvement in research, performance, and design projects*

UA students have a large variety of opportunities for research and creative activity, and it is difficult to calculate the number of students involved in them. Analysis of student focus groups indicates that research opportunities are an important undergraduate recruiting tool for the UA and that students highly value undergraduate research opportunities. In a focus group of lower-division undergraduates, for example, one student summarized the benefit of the UA’s research opportunities by saying, “We all came knowing that this is a research-based university and we would not have come if it wasn’t.”

In a survey of seniors who graduated between Fall 2008 and Summer 2009, 55 percent reported involvement in a research project or program, and 12 percent reported involvement in a UA performance, public presentation, or design project. Of the 55 percent who reported involvement in research, 36 percent were enrolled in independent study, capstone, or directed-research courses, and another 19 percent reported internships, research with UA faculty, or payment from a UA contract. Thus a total of 55 percent could be substantiated by some method other than self-reporting.

It can be difficult to capture the extent of undergraduate participation in research because students performing similar work with similar performance expectations might be enrolled in different ways—indirect study, directed research courses, capstone courses—or not enrolled in a course at all. Informal queries to data managers of other American Association of Universities (AAU) institutions indicate that capturing student participation in “research” is a common problem. The UA seeks to take a leadership role within the AAU to help communicate the major benefits to students of attending a research-intensive university.

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55 percent of graduating seniors reported involvement in a research project or program.  

The Undergraduate Biology Research Program (UBRP) and Biomedical Research Abroad Vistas Open! (BRAVO!) (see also Criterion Four) are companion programs featured in the last self-study that continue to be national models. They are supported by grants from Howard Hughes Medical Institute, the National Science Foundation, the National Institutes of Health and the American Society for Pharmacology and Experimental Therapeutics. UBRP supports 140 undergraduate students each year in a variety of physical, natural, biological and behavioral sciences projects and includes more than 240 faculty sponsors drawn from 43 UA departments and four organizations in the Phoenix area: the Western Cotton Research Lab, the Arizona Science Center, Barrow Neurological Institute and the Mayo Clinic. In addition, UBRP infrastructure has been used to provide research experiences to minority community college students, high school students, and students from other undergraduate institutions. More than 1,600 distinct students have gained research experience through UBRP since its inception.
Internalizing Disciplinary Norms and Standards

The 11-unit Case Study, begun in Fall 2009, was designed to address a wide range of assessment issues, including the learning and internalization of the norms and standards of students’ disciplines at both the graduate and undergraduate levels. This aspect of their education must be done outside of the classroom and requires regular student contact with professional environments and a range of working professionals as role models.

The Case Study indicates that at the graduate level, programs require students to attend workshops and professionalization courses, write in the discipline, attend regional and national meetings, hold informal meetings with visitors, attend seminars and colloquia, engage in public speaking, work in teams, or participate in grant writing; no less than 7 (and up to 9) of the 11 responding programs in the Case Study indicated use of each mechanism. These mechanisms are consistent with the master-apprentice model of most graduate education.

At the undergraduate level, programs rely more on local efforts to achieve these goals, mainly having students work in teams, join department-sponsored student clubs, participate in department-promoted student projects, engage in public speaking and write in the discipline. Each mechanism was mentioned by 2/3 or more of the 10 departments that responded to this question; the other mechanisms used at the graduate level were mentioned in less than half of the responses for the undergraduate level in the Case Study.

These results suggest considerable attention to the development of these norms and standards at the graduate level, but less attention at the undergraduate level. At least part of the difference may be due to the fact that a very high percentage of graduate students will have careers in their graduate disciplines. At the undergraduate level, the percentage will be less, and in some cases much less (for example, Psychology). While the challenge of scale is undoubtedly one barrier to broader implementation of these experiences at the undergraduate level, increased utilization of local resources, such as requiring or strongly encouraging undergraduate attendance at seminars and colloquia or hosting informal undergraduate meetings with visitors are ways of developing professional norms in those students who are interested at the undergraduate level.

Supporting Life-Long Learning

In addition to standard Intercollegiate Athletics programs, student publications, and musical groups, the Associated Students of the University of Arizona supports more than 500 student clubs and organizations that foster, directly or indirectly, an effective student learning environment for both residential and off-campus students.

Residence life programs have also continued to blossom since the last accreditation review. Specifically, a number of outstanding living-learning communities of students sharing personal or academic interests have been established since the last review. While the UA started developing such communities in the 1990s, they have seen tremendous growth since 2000.

Communities with specific themes include the Blue Chip Leadership Residential College at Pima Lodge, the Eller College Pre-Business Community at Colonia de la Paz, the Engineering Zone at Gila Hall, the MOSAIC Multicultural Experience at Manzanita-Mohave Hall, the O’odham Ki: Wing for Native American students at Kaibab-Huachucha, the Women in Science and Engineering (WISE) Community in Gila Hall, and the Honors communities that started in Yuma Hall and that have been expanded to three residence halls, including Posada San Pedro and Yavapai. Theme floors for Fine Arts and Health Sciences exist in Manzanita-Mohave Hall and Graham-Greenlee Hall, respectively.

The Pima Blue Chip Leadership Community is a living-learning community that promotes academic success, encourages leadership development, and provides a variety of out-of-class activities.

UA Collegiate Cattle Growers Association sells beef kabobs at Spring Fling [Photo by Lacey Dunlap]
learning experiences that challenge and engage Blue Chip students. The Arizona Blue Chip Program is a four-year co-curricular leadership education experience designed to build leaders who make a difference. Blue Chip students have opportunities to hold leadership positions in the Pima Lodge residence hall programming and service teams, to attend leadership workshops, to take leadership classes, and to participate in monthly programs. The UA recognizes that leadership development is a critical component of total learning.

MOSAIC is a living-learning community housed in Manzanita-Mohave Hall at the UA. MOSAIC is an acronym that stands for Making Our Space An Inclusive Community. It is a living-learning community intended for first-year students who are interested in the promotion of issues related to diversity and multiculturalism. The primary goal of MOSAIC is to raise awareness of, and to facilitate discussion about, issues of race, social justice, class and ethnicity in a way that supports an inclusive and safe campus culture and learning environment in which each member of the university community is welcomed and valued.

The O’odham Ki Wing for Native American students is housed at Kaibab-Huachuca Hall. O’odham Ki—pronounced AW-tham-KEE—translates from the O’odham language as “The People’s House.” This community is a collaboration of the First Year Scholars Program of the Native American Student Affairs Office and Residence Life. The wing provides a supportive living and learning community for Native American students.

Study Abroad is a co-curricular experience that also helps students expand their knowledge of global society and develop critical cross-cultural skills. During the 2007-08 academic year, 1,846 undergraduate students, or 6 percent of total undergraduates, participated in Study Abroad. Student participation in UA Study Abroad programs has increased approximately 7 percent every year for the past 10 years. According to the Institute of International Education’s “Open Doors 2009 Report on International Educational Exchange,” the UA is ranked 18th in the list of top 40 doctorate institutions and 10th among its AACC peer institutions (See also Criterion Four, Core Component 4c).

Intercollegiate Athletics are an important part of the beyond-the-classroom experience, and are separately accredited by the National Collegiate Athletic Association (NCAA). The most recent NCAA accreditation visit was in 2007. One of the most significant changes in Intercollegiate Athletics in the last decade was the 2007 transition of the CATS Academics program, which provides academic support services to student athletes, to the Division of Student Affairs. The move has improved services to athletes and has placed the accountability for academic success outside of Intercollegiate Athletics. CATS stands for Commitment to an Athlete’s Total Success and plays on the Wildcats nickname for Arizona athletes, ‘Cats’ for short.

Core Component 3c: Summary
The University of Arizona has created a coherent, consistent message about its value and support for effective teaching environments both in the classroom and beyond. The UA has been able to decrease average class sizes until the most recent economic pressures. In 2009 the UA began holding classes in one “mega-classroom,” but it is committed to assessing the impact of the very large class size on retention and graduation rates. The UA also is monitoring the changing demographics of who teaches and the implications this has for curriculum and professional development. The 11-unit Case Study provides evidence that classroom technology has been well supported, but is aging. The UA is continuing to meet the learning needs of a diverse student body by increasing its use of distributed and hybrid teaching, with a focus on rigorous assessment. The UA has a very strong Honors College, and recent growth in Honors residence halls and a new Honors fee will strengthen the Honors experience. The UA provides solid evidence that it values and supports learning environments beyond the classroom. It offers extensive research opportunities for undergraduates, supports the learning of disciplinary norms at the graduate and undergraduate levels, and creates life-long learning environments in its residence halls.

CORE COMPONENT 3D:
The organization’s learning resources support student learning and effective teaching.

Student Preparation
The state of Arizona is consistently below the national average in high school graduation rates (see Table 8), setting the stage for lower-than-average college completion rates and a loss of the economic benefits that individuals and states derive from higher education.
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Table 8 indicates that students in every ethnic group in Arizona are graduating high school at rates significantly lower than their peers nationally and fewer than half of those are prepared to enter college. From 1996 to 2006, the likelihood of Arizona’s ninth graders enrolling in college within four years dropped by 11%—substantially more than the nationwide decline on this measure. These gaps make early outreach programs at the UA critical. In early 2006 Governor Napolitano convened the P-20 Council to systematically address educational alignment in programs and policies from preschool, K-12, and postsecondary education into life-long learning opportunities. Governor Brewer continues to convene and support this council.

Access

President Shelton has articulated a vision for the university of “access, quality, and discovery.” Against a backdrop of increasing college costs, the UA continues to develop robust programs to prepare middle- and high-school students for their college experience and to provide sufficient financial aid, especially for low-income students.

Financial aid has been used effectively to offset the impact of tuition, which increased for Arizona resident undergraduates from $2,348 in 2000 to $6,814 in 2009, a change of about $4,500. During that same period, the 20 percent to 25 percent of Arizona resident undergraduates who qualified for a Pell Grant saw their need-based gift aid increase by $6,659, from an average of $3,338 to $9,997. Although some of this increase resulted from higher levels of federal Pell Grants, most was due to infusions of UA financial aid. This also helped these students with increases in other college costs. Arizona’s three universities are at a distinct disadvantage compared to many other states with regard to state financial aid support. For example, California, Texas and Ohio provided $333, $422, and $360, respectively, in state spending for financial aid per college student in the 2005-06 academic year, while Arizona spent a mere $5 per student. In part due to the commitment of university resources, overall indebtedness of graduating students has not changed much in the last five years (see also Criterion Two).

UA efforts to prepare students for success include several programs in addition to financial aid:

- **The Office of Admissions** new position of Advisor for Equity, Access and Inclusion, who reports to the Director of Undergraduate Recruitment. This position oversees outreach to underrepresented populations in and outside of Arizona. The advisor provides the recruitment team with information and training about equity, access and inclusion, and helps design and implement recruitment plans. UA freshman diversity increased from 27.1 percent in Fall 2005 to 34 percent in Fall 2009. A full-time outreach staff person with a satellite office in northern Arizona contributed to American Indians having the largest percentage increase in freshman enrollment, up 13 percent.

- **Mathematics, Engineers and Science Achievement (MESA)**, an intensive college-preparation program designed for ethnic minority, low-income, and first-generation college-bound students in targeted school districts throughout the country. In southern Arizona, MESA meetings include hands-on STEM activities, college-preparation workshops, and individual academic guidance and student evaluation. MESA meetings are held at 40 different high schools and middle schools in the southern Arizona region, and more than 1,100 students participate in southern Arizona MESA activities each year.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>NATIONAL</th>
<th>ARIZONA</th>
<th>AZ COLL ELIGIBLE</th>
<th>GAP</th>
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<td>57%</td>
<td>22%</td>
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</tbody>
</table>

1 A State Mandated Eligibility Study is conducted every 4 years to estimate the percentage of HS graduates that meet the universities’ admission criteria.

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Table 8. 2006 Comparison of Arizona and National High School Completion Rates
• **The Tucson GEAR UP Project**[^1], funded by a grant from the U.S. Department of Education in partnership with the UA, Pima Community College, Sunnyside Unified School District, Tucson Unified School District, The Aurora Foundation, Competitive Engineering, KB Home Tucson, Inc., Principal Tutoring, Society of Hispanic Professional Engineers and Tucson Medical Center. The project began during the 2005-06 academic year with sixth-grade students in 14 middle schools and will continue to serve these students through high school. Activities include career exploration opportunities, college knowledge workshops, tutoring, educational field trips, campus visits and tours, summer enrichment activities, Math through Mariachi, and Voices of GEAR UP.

• **The College Academy for Parents**, which has served parents of elementary students in the Sunnyside Unified School District since 2004. This initiative is designed to help parents understand current and future academic expectations, improve communication with schools, and increase their involvement in order to prepare students for a college education. The program, offered in Spanish and English, consists of 12 two-hour workshops in Spanish and English and two visits to the UA.

• **The Arizona Assurance Scholars** program extends opportunities for education to Arizona students by providing sufficient financial support. It also includes a range of academic and personal development resources designed to enhance scholars’ success. In its second year, tuition-free education was provided to nearly 1,200 Arizona students, and the incoming Fall 2010 class has enrolled nearly 1,000 new freshmen. Arizona Assurance scholars are retained at a higher rate than similar comparison groups and perform better, with slightly higher GPAs and less academic probation. As shown in Figure 5, the first cohort shows an increased retention rate: 80.1 percent versus 74 percent among similar groups in previous years (see also Criterion One and Criterion Two).

Recognizing the sharp increase in the number of Iraq War veterans returning to the state to pursue a college education, the UA has invested significant resources to improve access and support for veterans. Started in 2008, the Veterans Education and Transition Services (VETS) Initiative, administered through the UA Disability Resource Center, coordinates services for veterans, including GI Bill certification, targeted transitional classes, and athletic programs for disabled veterans. Supported by a federal grant sponsored by Arizona Congressman Raul Grijalva, the program is viewed as a national leader in campus veterans’ support, and it already has won the Silver Excellence Award from the National Association of Student Affairs Professionals (NASPA). Since VETS started in 2008, 94 percent of veterans who participate are still at the university working toward degrees. Nationally, only 6 percent of veterans complete bachelor degrees within the five years of GI benefits. UA retention rates are very promising for this at-risk group.

[^1]: Recognizing the sharp increase in the number of Iraq War veterans returning to the state to pursue a college education, the UA has invested significant resources to improve access and support for veterans. Started in 2008, the Veterans Education and Transition Services (VETS) Initiative, administered through the UA Disability Resource Center, coordinates services for veterans, including GI Bill certification, targeted transitional classes, and athletic programs for disabled veterans. Supported by a federal grant sponsored by Arizona Congressman Raul Grijalva, the program is viewed as a national leader in campus veterans’ support, and it already has won the Silver Excellence Award from the National Association of Student Affairs Professionals (NASPA). Since VETS started in 2008, 94 percent of veterans who participate are still at the university working toward degrees. Nationally, only 6 percent of veterans complete bachelor degrees within the five years of GI benefits. UA retention rates are very promising for this at-risk group.

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**Facilities**

Growth of the UA main campus is constrained by a fixed planning boundary and by the historical neighborhoods beyond it. According to a 2003 Comprehensive Campus Plan (CCP), the university has space to build roughly 6.8
Chapter 4: Criterion Three

110

million additional square feet of facilities within the main campus boundaries while maintaining its engaging environment of pedestrian-friendly, landscaped open spaces. It was conservatively projected that this growth would accommodate a limited enrollment of roughly 42,000 students, along with continuing growth in research and Health Sciences Center areas as well. The 2009 CCP update, however, has more realistically projected that with the construction of slightly taller buildings, the campus could instead grow an additional 12 million square feet, while still maintaining its comfortable open space aesthetic. This growth could accommodate closer to 50,000 students, which provides considerable flexibility for main campus growth.

The 2009 CCP update also explores potential opportunities for new off-campus locations for selected university facilities. The downtown area, with a new modern streetcar connection to campus, provides many such possibilities. Other options include privatized student housing around the edges of campus, as well as new facilities at the nearby Campus Agricultural Center and BioPark locations to the north and south of campus. The UA is developing 2 + 2 partnerships with community colleges, which also help accommodate growth needs. With all of the flexible options being developed through new programs, and with new information from the CCP update, the UA is confident it has the ability to meet its growth needs far into the future.

Instructional Resources: Results from the Case Study

Table 9 shows faculty responses to the 11-unit Case Study question, Do you have the kinds of

Table 9. Case Study Faculty Response about Teaching Space

<table>
<thead>
<tr>
<th></th>
<th>Sufficient</th>
<th>State-of-the-Art</th>
<th>Up to current standards</th>
<th>Below current standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory</td>
<td>26%</td>
<td>5%</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>Classrooms</td>
<td>28%</td>
<td>8%</td>
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<td>33%</td>
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<td>Reference books</td>
<td>38%</td>
<td>11%</td>
<td>35%</td>
<td>13%</td>
</tr>
<tr>
<td>Library support</td>
<td>36%</td>
<td>16%</td>
<td>39%</td>
<td>11%</td>
</tr>
<tr>
<td>Clickers, computers, etc.</td>
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<td>6%</td>
<td>38%</td>
<td>29%</td>
</tr>
<tr>
<td>Course management software</td>
<td>34%</td>
<td>13%</td>
<td>40%</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>1%</td>
<td>4%</td>
<td>6%</td>
</tr>
</tbody>
</table>
laboratory, classroom space and equipment you feel you need to teach your students optimally?

The moderate percentage of faculty reporting that UA classrooms, laboratories and equipment are sufficient, state-of-the-art or up to current standards indicates an opportunity for the UA to improve its facilities.

Student Retention and Learning Support

Student persistence and graduation are two key indicators of excellence. Overall first year persistence has increased slightly to 78 percent since 1990 (see Figure 6). The sharp drop in persistence for the 2001 cohort appears to be related to the 9/11 terrorist attacks. The drop was due almost entirely to an increase in out-of-state students who did not return for their second year and is consistent with similar patterns at some peer universities. Since 1990 the UA four- and six-year graduation rates have increased dramatically over the same time period. Four-year graduation rates have doubled to 36 percent and six-year graduation rates have increased from 51 percent to 58 percent.

Minority first-year persistence and graduation rates have shown similar trends (see Figure 7). Current persistence rates for minority students are within 2 percent of the overall persistence rate. Minority four-year graduation rates also more than doubled from 1990 to 2005, but still lag the overall rate by 7 percent. Six-year graduation rates of minority freshmen increased by 11 percent to 52 percent. Significant variations in four-year graduate rates still exist, however, for various minority groups (see Figure 8).

Reasons for increases in graduation rates include UA college-level retention programs, including the Think Tank and the Finish in Four initiative; the high priority placed on course availability even when budgets have been reduced; in-

Figure 6. First-year Persistence and Four- and Six-year Graduation Rates of First-time, Full-time Freshmen Entering Fall 1990 – Fall 2008
creased preparation levels of students, including increasing numbers of AP and community college courses taken while in high school; and economic pressure from higher tuition and other costs, which stimulates students to finish more quickly.

There have been gains in persistence and graduation rates for some underrepresented minorities, but some are still disturbingly low. Graduating students often cite ethnic minority student support services as providing a community and a home-away-from-home. Retention planning and efforts must continue to address the lower-than-average persistence and graduation rates for underrepresented minority students.

The university is categorized as a Carnegie very-high research institution, with a broad research agenda and a large number of academic programs. It is Arizona’s land-grant university and the state’s only member of the Association of American Universities (AAU). In its 2007 report,
the Center for Measuring University Performance (CMUP) ranks the UA as 16th among public research institutions. Also in 2007 the AAU ranked the university 8th in enrollment of first-time freshmen, 34th (out of 34) in student persistence and 22nd (out of 23) in average SAT scores among public AAU members.

Faculty, student affairs staff and university administrators have looked at ways to improve student persistence and graduation over the past 10 years. These efforts have advanced valuable suggestions to promote student success.

The 1998 report The University of Arizona: Student Retention—Toward a Culture of Responsibility, proposed a campus-wide culture in which everyone—faculty, staff and students—accepts responsibility for student retention. The recommendations focused on improving retention rates through new emphases on residence halls, student learning experiences and new programs. New advisors were hired and the advisor to student ratio improved across the university from 1:1,200 to 1:300.

In 2005, the UA developed its first Retention Strategic Plan, for which it won the Consortium for Student Retention Data Exchange (CSRDE) 2005 Best Practices Student Retention Award. The plan outlines guiding principles and goals for the UA to follow between the years 2005 and 2011 in order to achieve goals of increasing the retention rate for all first-time, full-time freshmen from 78 percent in 2005 to 85 percent by 2010; increasing persistence rates by five points to 77 percent for sophomores and 73 percent for juniors by 2010; and increasing four-year graduation rates by five points to 45 percent, five-year rates to 65 percent and six-year rates to 70 percent for students entering in 2009.

In 2008, the Faculty Senate formed the Task Force on Retention and Advancement of Undergraduate Students. The task force looked at the student persistence and graduation issues from the academic perspective and offered many valuable recommendations to improve student success. They included offering three degree types, Regular, Multidisciplinary and Honors, and adopting strategies to increase the percentage of incoming freshman with SAT scores greater than 1,060.

Table 10. Arizona Percentage of Students Completing High School Competencies

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Math</th>
<th>Science</th>
<th>Language</th>
<th>Soc. Sci.</th>
<th>Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>70%</td>
<td>27%</td>
<td>47%</td>
<td>47%</td>
<td>77%</td>
<td>74%</td>
</tr>
<tr>
<td>Native American</td>
<td>66%</td>
<td>20%</td>
<td>49%</td>
<td>37%</td>
<td>73%</td>
<td>64%</td>
</tr>
<tr>
<td>Asian American</td>
<td>86%</td>
<td>68%</td>
<td>82%</td>
<td>75%</td>
<td>92%</td>
<td>91%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>65%</td>
<td>26%</td>
<td>50%</td>
<td>51%</td>
<td>78%</td>
<td>71%</td>
</tr>
<tr>
<td>White</td>
<td>81%</td>
<td>48%</td>
<td>69%</td>
<td>64%</td>
<td>89%</td>
<td>87%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>75%</td>
<td>40%</td>
<td>62%</td>
<td>59%</td>
<td>84%</td>
<td>81%</td>
</tr>
</tbody>
</table>

Source: Arizona Board of Regents

Of significant concern is the under-preparation of students in math, a gateway discipline for most majors and often a significant stumbling block for students when they come to college. Data from a 2006 Arizona Board of Regents study is presented in Table 10.

As of Fall 2009, student retention was at 78 percent. This is partly because the university did not significantly increase its entrance requirements, as anticipated in 2005, due to multiple constraints. However, the data on under-preparation of students in math have led to a more focused
set of UA initiatives to increase retention. For example, the Math and Science Tutoring Resource Center (MASTR) and the Writing Center were combined in 2009 into a new entity called the Think Tank, with free and fee-based tutoring services, as well as supplemental instruction, peer mentoring, review sessions and test preparation. The Think Tank is collaborating with course coordinators in mathematics to deliver lower-division tutoring services. For many years, the UA has recognized poor student performance in certain math courses as a hindrance to student progress. For instance, in the Fall of 2009, 53 percent of students who took Math 120R—calculus prep, a class necessary for all science majors—failed. Five of the 10 top D-E-W courses are math classes. The Think Tank is attempting to create a more rigorous partnership between the math department and tutoring. In Spring 2010, in collaboration with the Math department, the Think Tank offered 32 sessions per week of supplemental instruction for Math 120R.

Use of tutoring services in MASTR and the Think Tank are summarized in Figure 9.

In addition, the Think Tank offers science, language, writing, and general education tutoring—subjects identified as high need in student surveys. Since the merger of the Writing Center into this larger enterprise, student use of the Writing Center has increased by nearly 50 percent from 2008. In the Think Tank’s first semester, student satisfaction data indicated 73 percent of respondents are moderately or very satisfied with math tutoring and 95 percent indicated satisfaction with Writing Center services. An assessment of the Think Tank is underway to indicate if students who use its services demonstrate higher course grades, GPA and/or retention.

The UA is currently developing an Early Alert System to enable faculty to alert students and student support staff when students are exhibiting red-flag behaviors, such as frequent absence or poor test performance, which might undermine their success. Early Alert is becoming a standard tool at universities to increase retention rates. The system will be piloted at the UA in Fall 2010, targeting gate-keeping courses. The UA developed a similar system in 2004 but later stopped its implementation, in part because it was difficult to identify and support appropriate interventions for students identified as at-risk.

“My life has changed dramatically since I first set foot on the UA campus. I have learned about discovering personal passions and new interests in a classroom setting. Arizona Assurance has assisted my discovery of these many passions, both directly and indirectly. The scholars program has given me an incentive to do well on my academics and has provided me with a better understanding of the University system.”

Mahala, Arizona Assurance Scholar

Figure 9. Individual Student Counts for Tutoring Services, MASTR and the Think Tank as a Function of Academic Year
In 2005, approximately one-third of UA courses utilized Desire2Learn (D2L), the university’s course management system. By 2009 this had increased to more than 90 percent of courses. D2L’s built-in communication capabilities are expected to facilitate faculty use of Early Alert for at-risk students.

**Targeted Retention Programs**

The 2005 Retention Strategic Plan observed that despite recent improvements, underrepresented minority freshman retention and six-year graduation rates are lower than for their majority counterparts. According to the plan, “Optimal student retention can only be fully achieved when all students—including students of color, first-generation students, transfer students and students with disabilities—experience success in degree completion at the same rate as the majority population.” With this in mind, several targeted retention programs have continued to evolve at the UA.

A good example are Success Courses, offered at the department and college levels, which have contributed greatly to improving student success. The advantage of department level success courses is that information can be tailored to the specific skills needed for success in a particular discipline. The college-level courses tend to be more general in order to help students hone their university-level skills, to learn how to take advantage of the many resources available at both the college and university levels, and to become part of the UA community. Many success courses are open to all students across campus. The UA has not identified specific courses for incoming students and leaves it to the local levels to decide on the nature and extent of success offerings. At the university level, the administration is planning a new initiative to encourage more departments and colleges to offer success courses.

Experience has shown that students who take a success course have improved retention and academic performance. For example, evaluation of a success course taught in the Center for Exploratory Students, an advising center for undecided students in the Colleges of Letters, Arts and Science, found that performance in the success course was a predictor of longer-term success at the UA. Students who did well in the course tend to show longer retention at the UA; to select majors earlier, usually in their sophomore years; and to choose a wider variety of majors than students who did not do as well. A department-based success course in Psychology included a peer-mentoring program as well as workshops on academic strategies and career opportunities. An evaluation of this course found that even for students with similar incoming SAT scores and grade-point averages, retention for students taking the success course was 10 percentage points higher than for those not taking the course—85 percent and 75 percent, respectively. Passing the course meant that students were significantly less likely to have a GPA below 2.0. Pre- and post-course surveys found that students gained confidence and information about campus resources.

In 2005, the College of Science initiated a mandatory one-unit success course for students placed on academic probation with GPA’s falling below 2.0 after their first semester. The course, taught face-to-face by advisers, has dramatically improved retention and graduation rates for at-risk students, as Table 11 shows. The control group was 102 first-time full-time (FTFT) freshmen in Fall 2002 and Fall 2003 who went on academic probation after their first semester; this was before the success course was offered. The treatment group was 155 FTFT freshmen who went on academic probation after their first semester and who took the mandatory success courses in the spring semesters of 2005 and 2006, when they were first offered. The two cohorts were statistically similar in terms of high school GPA and standardized test scores. The improvements, from retention to graduation rates, are substantial. The courses are ongoing with similar results, and more students are encouraged to enroll.

New Start gives undergraduates a six-week comprehensive orientation during the summer before their freshman year. The experience includes a 3- to 7-unit academic course, daily...
Chapter 4: Criterion Three

college success workshops, academic support services and counseling, and social and leadership programs. New Start serves an average of 250 students per summer. An average of 60 percent of New Start students are Hispanic, and an additional 30 percent are from other ethnic minority groups. Data gathered since 1996 show that New Start participants have greater success and higher retention rates than do comparison non-participant groups.

Student Support Services (SSS) is a U.S. Department of Education funded TRIO program housed under Student Affairs. There are currently 10,468 UA students, or more than 25 percent of the UA undergraduate population, who are eligible for Student Support Services based on first-generation, low-income or disability status. Table 12 provides a breakdown of those students by eligibility criteria.

The primary goals of SSS are to increase college retention and graduation rates and to facilitate the transition from high school to a four-year college or university. SSS provides services and support throughout each student’s academic career. The one-year retention rate of the new freshmen admitted to the SSS program in Fall 2003 was 88.7 percent. The four-year and six-year graduation rates for this cohort were 30.2 and 52.8 percent, respectively.

During most of the last decade, a unit called Multicultural Affairs and Student Success (MASS) housed the TRIO and New Start programs as well as the ethnic minority support centers that provided freshman year programming for diverse students. In the last year, MASS was consolidated due to UA Transformation, a process designed to improve collaboration within the university and to help it meet future challenges. MASS programs, however, including New Start and SSS, are still active in other units.

Transfer students are another population more diverse than the first-time full-time freshman class. The UA is developing robust programs to support students transferring from Pima Community College and other community colleges in the state. In 2009, the UA hosted a state-wide Transfer Summit, which hosted state community-college and college officials with the goal of expanding the pipeline and access for transfer students. Since then, the UA has developed a fully operational Transfer Center, which includes the first national transfer student honorary in Arizona, Tau Sigma, and a new website through which students can Skype appointments, transfer orientation, and academic support programs.

The UA also has programs designed to encourage students of diverse backgrounds to pursue advanced studies. The McNair Achievement Program (MAP) is a federally funded TRIO program that seeks to increase the number of underrepresented minority (URM) and first-generation Ph.D. recipients. Now in its 10th year, MAP helps

Table 11. Results of Mandatory Success Course for College of Science Freshmen on Academic Probation Because Due To GPA Below 2.0

<table>
<thead>
<tr>
<th></th>
<th>Off probation w/in 2 semesters</th>
<th>Eligible for University Disqualification</th>
<th>Persisted to Second Year</th>
<th>Persisted to Third Year</th>
<th>Persisted to Fourth Year</th>
<th>Graduated within 4-5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group* n=102</td>
<td>9%</td>
<td>63%</td>
<td>22%</td>
<td>6%</td>
<td>6%</td>
<td>2%</td>
</tr>
<tr>
<td>Treatment Group*, n=155</td>
<td>49%</td>
<td>33%</td>
<td>60%</td>
<td>46%</td>
<td>41%</td>
<td>25%</td>
</tr>
</tbody>
</table>

“Most professors in the department have an open door policy, inviting students to consult with them on their individual projects. Students are strongly encouraged to take part in various academic activities that should broaden their intellectual and professional horizons.”

Undergraduate major in Communication from the Assessment Case Study

Natalie Nevárez at the Ronald E. McNair Achievement Program Colloquia [Photo by Kathryn Ortiz]
students develop the strong academic skills necessary for admission into a graduate program. Students are paired with a faculty mentor and engage in a summer research experience while also participating in GRE prep workshops, tutoring, academic advising, and a graduate school survival skills course.

A total of 113 scholars have participated in MAP from 2000 to 2009. More than 75 percent of McNair alumni enroll in graduate school, with most receiving full funding. In Fall 2009, 77 percent of McNair scholars were African American, Hispanic and Native American, or URM as defined by MAP. Twenty-three percent were non-URM students: Asian Pacific American and Anglo American.

Other examples of graduate pipeline programs include the Summer Research Institute, the Minority Health Disparities Summer Research Opportunity Program and the Minority Access to Research Careers Project. Summer Research Institute is a 10-week program that teaches research skills. Students receive six units of credit and a stipend, and 85 percent of students who participate go on to graduate school. The Minority Health Disparities program focuses on health disparities in minority communities. Students are paired with a faculty mentor, are given graduate application assistance, and are provided with financial support. Minority Access to Research Careers provides similar academic support, but underrepresented students in biomedical research are the targeted group.

**Technology**

Since the Student Technology Fee was instituted in 2006, 80 percent of the campus is covered by wireless networking services. Students can access online materials and e-mail from almost anywhere on campus.

Establishing a reliable, university-wide course management system has been a major priority in moving faculty away from traditional brick-and-mortar models toward more hybrid and online models of instruction delivery. During the past several years, the Libraries, the Office of Student Computing Resources, the Office of Instruction and Assessment, and other programs have worked diligently toward this goal. The percent of course sections taking part in the UA’s content management system, Desire2Learn (D2L), has grown from 33 percent in 2005 to 91 percent in 2009.

The university also has made use of today’s popular social networking tools. For example, courses are captured and distributed as podcasts through iTunesU. Facebook, Second Life, MySpace, Twitter, and other tools, including institutional messaging, are used to communicate with students on various issues.

The UA Libraries have always played a critical role in the educational process, whether through traditional, hybrid, or online modes of delivery. In the digital realm, they have long been ahead of the curve, offering online resources and services that enhance access, provide convenience and flexibility, and foster 21st century skills. For more than a decade, the libraries have moved steadily to online access for journals, newspapers, and monographs. More than 85 percent of all periodicals are now online, more than 70 percent of current monographs are in electronic format, and more databases are available with hundreds of thousands of online audio and video titles. In physical facilities, students have access to more than 500 workstations, nearly 200 laptop loaners, presentation practice rooms, extensive collaborative and individual study spaces and in-person or on-demand research and technology assistance.

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>NUMBER</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Income</td>
<td>3,966</td>
<td>13%</td>
</tr>
<tr>
<td>First-Generation</td>
<td>4,146</td>
<td>14%</td>
</tr>
<tr>
<td>Low-Income &amp; First-Generation</td>
<td>699</td>
<td>2%</td>
</tr>
<tr>
<td>Disabled</td>
<td>1,586</td>
<td>5%</td>
</tr>
<tr>
<td>Low-Income &amp; Disabled</td>
<td>71</td>
<td>.2%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>10,468</td>
<td>33%</td>
</tr>
</tbody>
</table>

Source: Office of Institutional Research and Planning Support

Table 12. Number and Percentage of UA Undergraduates Qualifying for SSS Support
Chapter 4: Criterion Three

In 2003 the university opened its new Integrated Learning Center (ILC), focused primarily on students and instruction. The ILC is a state-of-art learning environment that includes multi-use, technologically-equipped lecture halls and classrooms; a student support area; and instructional support space. Over the past decade, the center has evolved into a showcase for new teaching and learning methodologies that are based on the full incorporation of modern equipment, software and social networking and communications tools. In January 2010 the ILC also became the home of the new Office of Instruction and Assessment.

The 2010 implementation of the new UAccess student information system from PeopleSoft, part of the MOSAIC computer systems upgrade project, has been challenging. Based on the experience of other institutions, the UA expects to be able to better serve students, faculty and staff in the future, with such needed capabilities as an e-advising system to help students stay on track and help departments predict need for specific courses in students’ majors.

Diversity as an Educational Resource for all Students

The University of Arizona strives to ensure that all students are prepared to be successful in a rapidly-changing, increasingly diverse and global environment. As part of the UA’s general education curriculum, all students are required to take three units of Diversity Emphasis courses, which focus on gender, race, class, ethnicity, sexual orientation, and non-western studies. The UA expects these classes to enhance students’ critical thinking, their understanding and valuing of differences, their ability to communicate effectively, their understanding of self, and their ability to recognize the interdisciplinary nature of knowledge.

Within the past three years, the UA has strengthened some of the interdisciplinary programs that focus on diverse populations and prepare students to serve as culturally competent leaders. For instance, the UA has:

- Elevated the Mexican American Studies and Research Center to the Department of Mexican American and Raza Studies
- Elevated the LGBT Studies Committee to the status of Institute
- Established the Disability Studies Collaborative and created a Disability Studies major.

Each of these programs provides unique opportunities to work with faculty on interdisciplinary research. For instance, at the Institute for LGBT Studies, students can work closely with faculty on research in areas such as neo-liberalism in China, contemporary politics of transnational migration, Chicana literature, and transgender and gender-diverse youth in the school system.

Another example is the U.S.-Mexico Border Research Initiative, which promotes collaborative research and graduate student and faculty exchange between the UA and institutions in Mexico. The initiative involves collaborative research projects in areas such as water, sustainable energy, optics, environment, education, health, security, transportation and food, among others. By engaging in this research, students and faculty create new knowledge that improves the human condition in Arizona, the nation, Mexico, and the rest of the world.

Because of their very strong outreach to the Hispanic community and their inclusive learning environments, the College of Medicine (in September 2009) and the James E. Rogers College of Law (in August 2008) were ranked among the top 10 graduate programs for Hispanic students by Hispanic Business Magazine. The magazine also has ranked the Eller College of Management 12th best and the College of Engineering 17th best in the nation for Hispanics.

Arizona is home to 22 federally recognized Indian tribes that occupy about 32 percent of the state. Many tribal communities have partnered with the university to enhance learning and research opportunities for students. The UA sits on original Tohono O’odham land and is in close proximity to the Tohono O’odham and Pascua Yaqui reservations.

“I do believe that the faculty in the Spanish Department is genuinely interested in my advancement because many times they have encouraged me to consider studying abroad and have gone out of their way to help me succeed in their class.”

Undergraduate major in Spanish and Portuguese from the Assessment Case Study
Chapter 4: Criterion Three

The Native American Cancer Research Partnership (NACRP) is a collaboration of the UA’s Arizona Cancer Center and Northern Arizona University, created in 2002 to develop community-based approaches to reducing cancer among Native Americans. The NACRP has developed tribal-approved research projects with breast and cervical cancer screening programs in the Hopi, Navajo and Tohono O’odham communities. Students are engaged in critical healthcare research and participate in undergraduate and graduate studies resulting from this project. The NACRP has been a powerful force in recruiting Native American students to healthcare careers, in which they are underrepresented. In 2009, 69 percent of students involved with NACRP were Native American.

Partnerships and Innovations that Enhance Teaching and Learning

The Faculty Fellows program increases interaction between faculty and students outside the classroom and laboratory environments, in such non-classroom settings as residence halls, cultural centers, Greek residences and athletic events. The goal is to facilitate a smooth transition from high school to university and to help students develop more effective decision-making, foster a stronger love of learning and ultimately, achieve graduation from the UA. Faculty Fellows assigns 30 fellows, many of whom are recognized locally and nationally for their contributions to teaching and student life at the UA, to nearly 30 venues around campus.

A second program designed to increase interaction between faculty and students is the Student/Faculty Interaction (SFI) grant program, which has provided funding to more than 600 faculty members to interact with more than 30,000 students over the last decade. Faculty members apply to the program, administered by the Office of Student Affairs, for grants to fund a wide array of events, including outdoor activities, one-on-one lunches, arts and entertainment, or even dinner at faculty member homes. Program assessments in 2004 and 2008 indicate a powerful impact on student learning, engagement and retention. For instance, 67 percent of students who participated in an SFI reported an increase in their active participation in a large lecture course. Sixty-two percent reported spending more time interacting with faculty members outside of lectures and the number of students who reported using office hours after participating in an event more than doubled.

Core Component 3d: Summary

The University of Arizona is committed to providing the highest quality education while being accessible to all its students. The UA also faces significant challenges in its efforts to ensure the greatest success of its students. Renewed focus on retention and graduation is vital for students of diverse backgrounds, especially given the ongoing gaps in achievement rates for African American, Hispanic and Native American students.

In a state with low rates of high-school graduation, the UA has taken proactive steps to reach out to children statewide in order to improve their preparation for a successful college experience. Early Outreach, MESA and other programs are charged with promoting college education among young students.

Despite campus-wide efforts to infuse diversity and inclusion into the student experience, departments are largely unaware of each other’s work. Efforts are ongoing in the College of Medicine, Engineering, Student Affairs and other units with little or no connection from one program to another.

The extent to which the UA curriculum is inclusive and incorporates diverse perspectives remains unclear. All faculty need to be engaged in this transformation in order for campus-wide change to occur. A systematic review is required to determine if curriculum transformation of this nature has taken place and if students are gaining diversity-related knowledge and skills. This review must include not only courses that deal explicitly with issues of diversity, but all other courses where different methods of inquiry and classroom activities could be used to promote diversity-related learning outcomes. The review
would inform faculty about campus best practices, which they could apply to their own courses.

“The faculty in the SWES department is very interested in the advancement of the students of the department. They see that the students are the future and will be the ones that can bring about a change. They offer many opportunities for meet-and-greets as well as finding lab work or internships.”

Undergraduate major in Soil, Water, and Environmental Science from the Assessment Case Study

At the same time, the university supports students with many successful programs such as Residence Life, New Start, the Disability Resource Center, Student Support Services and the Arizona Assurance Scholars program.

The university is challenged with bringing the campus up to current standards in information technology infrastructure. Campus-wide wireless connectivity, widely available course management software, electronic reference and resources, a model instructional building and other innovations have been introduced at the UA in the last 10 years. The institution has approved a new student technology fee, which will help provide the necessary funds to continue improving the university’s information infrastructure.

**BRIDGING TO THE FUTURE:**

**STUDENT LEARNING AND EFFECTIVE TEACHING**

The student experience in the classroom and beyond, at both the undergraduate and graduate levels, is at the core of the university’s mission. In the face of unprecedented financial challenges, the UA has improved graduation rates significantly at the undergraduate level and strongly supported graduate education that is commonly very interdisciplinary. Progress has been made in assessment at all levels through the formation of the Office of Instruction and Assessment, a wide range of workshops and training, and a strengthened web site. The UA is creating an environment of evaluation not just of student learning outcomes but across the university, while integrating classroom-and-beyond experiences with a focus on further improvement of retention and graduation rates.

- **Access/Diversity:** In the face of changing state demographics and a challenging economic environment, the university must preserve access to higher education. The UA is making every effort to improve the diversity of teaching faculty, to use assessment to assure quality learning experiences, to commit resources to keep classroom technology current and support areas of student demand, to improve access to degree programs, and to improve retention and graduation rates.

- **Quality:** The UA’s commitment to quality has implications for the student experience. The university will continue to improve assessment and to create an environment where evaluation for improvement is the standard. It is also supporting the efforts of the Honors College to ensure the success of a diverse honors student body.

- **Support for integrating classroom and beyond-the-classroom efforts:** The university should continue to emphasize support programs for the classroom and beyond, such as Arizona Assurance and VETS. The UA’s range of educational settings, from Residence Life to the Disability Resource Center, have been shown to improve the retention and graduation rates of a diverse student body.

**Photo:** Geography students perform water sampling at Aravaipa Creek, Arizona [Photo by David Fornander]
1. http://nsse.iub.edu/html/about.cfm
2. http://assessment.arizona.edu/sites/default/files/General_Education_Feasibility_Study_%20Fall%202007_%2010-08.pdf
3. http://assessment.arizona.edu/
7. http://assessment.arizona.edu/
11. http://assessment.arizona.edu/
12. http://gened.oia.arizona.edu/
15. http://grad.arizona.edu/assessment/node/18
17. http://oia.arizona.edu/
18. http://drc.arizona.edu
20. http://www.salt.arizona.edu/

26 http://azmesa.arizona.edu/index.html

27 http://tucsongearup.arizona.edu/


31 http://nca2010.arizona.edu/documents/Archive/Institutional%20Overview/Strategic_Retention_MP.pdf


33 http://nca2010.arizona.edu/documents/Criterion%203%20Student%20Learning/Student_Success_Courses.pdf

34 http://nca2010.arizona.edu/documents/Criterion%203%20Student%20Learning/CES_Success_Crs.pdf

35 http://nca2010.arizona.edu/documents/Criterion%203%20Student%20Learning/Psychology_Success_Crs.pdf

36 http://transitions.arizona.edu/NEWSTART

37 http://transitions.arizona.edu/programs/SSS

Chapter 5: Creativity and Knowledge Discovery

(Criterion Four)
CHAPTER 5

Criterion Four:
Creativity and Knowledge Discovery

The organization promotes a life of learning for its faculty, administration, staff, and students by fostering and supporting inquiry, creativity, practice, and social responsibility in ways consistent with its mission.

INTRODUCTION

The University of Arizona is one of the nation’s leading research universities, known for its strong support of interdisciplinarity and shared scholarship. Many of the UA’s efforts in the areas of research, creativity and knowledge discovery cross college boundaries, helped by a research support system that facilitates interdisciplinary and collaborative approaches to research and education. These qualities are critical to the university’s ability to use its expertise to help solve the most significant issues facing our society.

Faculty and students from across the university routinely work together to determine how best to diagnose and prevent disease; to sustain natural resources; to assess the impact of stereotyping on self-esteem and success; to search for conditions that might support life beyond our own planet; and to reason critically and objectively about moral and human values. This approach to research has helped move the UA to national and international prominence.

The UA is one of 63 members of the American Association of Universities, and was recently ranked 17th among all public institutions by the Center for Measuring University Performance. During the last 10 years, the UA has ranked as high as 14th among the nation’s public universities in National Science Foundation research expenditures. In the most recent NSF rankings, the UA is first in the nation in funding for the physical sciences. The UA is proud to be a student-centered research university; indeed, a large number of the UA’s undergraduates directly participate in research activities with faculty.

Some recent examples of UA research and creativity are:

- The 2008 Phoenix Mars Mission, led by the UA with $325 million in NASA funding. The Phoenix Mars Lander confirmed the presence of water ice on Mars and the existence of minerals and salts in the soil that likely resulted from water, fueling worldwide speculation about the possibility of life beyond Earth.

- The 2008 NSF-funded iPlant Collaborative, a $50 million effort to create a computer-based “cyber-infrastructure” to bring together plant and information from scientists around the world to answer plant biology’s “grand challenge” questions. The Collaborative recently released its first Discovery Environment, which provides a modern, common Web interface and computational platform to facilitate research in the grand-challenge question related to assembling the Tree of Life for the green plant species.

- The Department of Communication’s nationally ranked Media Program addresses such topics as the effects of television violence on society, sexual messages, and depictions of race and ethnicity. Another study on TV advertising to children, especially by the food industry, earned the project director an invitation to the White House.

- HarpFusion, a UA collaborative, is the largest touring concert harp ensemble in the world, with a repertoire entirely written or arranged by classical, jazz, new age, and folk musicians who comprise the group. Recent
### Table 1. UA Performance Compared to Top 25 Public Institutions

<table>
<thead>
<tr>
<th>Universities in Order of Top 25</th>
<th>Rank</th>
<th>2006 ** Total Research x $1000**</th>
<th>2007 ** Total Control Rank**</th>
<th>2007 ** Endowment x $1000**</th>
<th>2007 ** National Academy Members**</th>
<th>2007 ** Faculty Awards**</th>
<th>2007 ** SAT ACT Range**</th>
<th>2006 ** Undergraduate**</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of California - Berkeley</td>
<td>1</td>
<td>546,031</td>
<td>12</td>
<td>2,894,932</td>
<td>5</td>
<td>216</td>
<td>1</td>
<td>4</td>
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<tr>
<td>University of Michigan - Ann Arbor</td>
<td>2</td>
<td>554,031</td>
<td>11</td>
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<td>University of Florida</td>
<td>3</td>
<td>565,461</td>
<td>9</td>
<td>1,620,060</td>
<td>20</td>
<td>21</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>University of Michigan - Ann Arbor</td>
<td>4</td>
<td>576,199</td>
<td>16</td>
<td>1,190,000</td>
<td>446</td>
<td>58</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>University of California - Los Angeles</td>
<td>5</td>
<td>808,488</td>
<td>3</td>
<td>2,085,820</td>
<td>2</td>
<td>77</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>University of North Carolina - Chapel Hill</td>
<td>6</td>
<td>810,700</td>
<td>17</td>
<td>1,966,470</td>
<td>11</td>
<td>25</td>
<td>13</td>
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<tr>
<td>University of Wisconsin - Madison</td>
<td>7</td>
<td>831,865</td>
<td>1</td>
<td>1,936,761</td>
<td>12</td>
<td>71</td>
<td>7</td>
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<tr>
<td>George Mason University</td>
<td>8</td>
<td>440,899</td>
<td>18</td>
<td>1,608,682</td>
<td>14</td>
<td>30</td>
<td>14</td>
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<tr>
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<td>652,329</td>
<td>7</td>
<td>1,383,103</td>
<td>8</td>
<td>9</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>University of Texas - Austin</td>
<td>10</td>
<td>567,240</td>
<td>10</td>
<td>1,179,424</td>
<td>19</td>
<td>11</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>University of California - Los Angeles</td>
<td>11</td>
<td>587,240</td>
<td>14</td>
<td>1,124,871</td>
<td>9</td>
<td>19</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>University of Michigan - Ann Arbor</td>
<td>12</td>
<td>778,148</td>
<td>5</td>
<td>1,204,478</td>
<td>10</td>
<td>96</td>
<td>4</td>
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</tr>
<tr>
<td>University of Minnesota - Twin Cities</td>
<td>13</td>
<td>594,877</td>
<td>8</td>
<td>1,084,466</td>
<td>6</td>
<td>38</td>
<td>10</td>
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<tr>
<td>Texas A&amp;M University</td>
<td>14</td>
<td>492,955</td>
<td>15</td>
<td>6,149,804</td>
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<td>22</td>
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<tr>
<td>University of California - San Diego</td>
<td>15</td>
<td>754,756</td>
<td>6</td>
<td>5,528,241</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>University of Texas - Austin</td>
<td>16</td>
<td>431,398</td>
<td>19</td>
<td>1,990,174</td>
<td>1</td>
<td>59</td>
<td>8</td>
<td>36</td>
</tr>
<tr>
<td>University of Arizona</td>
<td>17</td>
<td>535,847</td>
<td>13</td>
<td>532,351</td>
<td>23</td>
<td>30</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td>University of California - San Francisco</td>
<td>18</td>
<td>796,149</td>
<td>4</td>
<td>1,362,656</td>
<td>16</td>
<td>99</td>
<td>3</td>
<td>39</td>
</tr>
<tr>
<td>University of Virginia</td>
<td>19</td>
<td>238,724</td>
<td>25</td>
<td>1,270,205</td>
<td>4</td>
<td>30</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Purdue University - West Lafayette</td>
<td>20</td>
<td>372,852</td>
<td>20</td>
<td>1,124,591</td>
<td>13</td>
<td>20</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>University of Maryland - College Park</td>
<td>21</td>
<td>354,240</td>
<td>22</td>
<td>446,648</td>
<td>25</td>
<td>25</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Michigan State University</td>
<td>22</td>
<td>358,097</td>
<td>21</td>
<td>1,247,713</td>
<td>17</td>
<td>7</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>University of California - Davis</td>
<td>23</td>
<td>571,022</td>
<td>9</td>
<td>1,030,921</td>
<td>22</td>
<td>32</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Penn State University - University Park</td>
<td>24</td>
<td>374,352</td>
<td>23</td>
<td>1,076,368</td>
<td>21</td>
<td>21</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>University of Texas - Medical Branch</td>
<td>25</td>
<td>133,237</td>
<td>24</td>
<td>1,348,260</td>
<td>15</td>
<td>36</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: The Center for Measurement of University Performance.

Each of these projects exemplifies the university’s approach to creativity and knowledge discovery in that they are collaborative, include students, and engage directly with the public to disseminate new knowledge.

This chapter is entitled “Creativity and Knowledge Discovery” to capture the activities that are typically thought of as research, as well as other important forms of creativity and shared scholarship taking place throughout the university. Taken together, they define the creative environment in which students and faculty are immersed. At the UA, collaboration across the fine arts, humanities, health sciences, biological and physical sciences, and other cross-disciplinary activities are not only common, but expected and supported. Because of these values, the UA excels in translational and interdisciplinary research focusing on society’s greatest concerns, including the formation of a sustainable environment with abundant-quality water and energy; the exploration of the human condition; the creation of a culturally and aesthetically vibrant borderlands environment; and the quest to understand our place in the universe. As a land-grant university, the UA is especially committed to sharing these achievements with the people of Arizona.

### CORE COMPONENT 4A:

The organization demonstrates, through the actions of its board, administrators, students, faculty, and staff, that it values a life of learning.

#### Research Performance

Several measures document the university’s strong research performance. The Carnegie Foundation for the Advancement of Teaching ranked the UA one of 59 Research 1 Institutions in 1994, its most recent ranking. The UA also is one of 63 public and private research university members of the Association of American Universities. Over the past 10 years, the UA has consistently ranked among the top 15 public institutions in National Science Foundation funding. The most recent report of The Center for Measur-
Chapter 5: Criterion Four

Ranks the UA 17th overall among public institutions (see Table 1).

Although the UA is highly ranked, it has a lower level of endowment support than many peer institutions and has experienced a steady decline in state funding in recent years. Figure 1 shows the relationship between endowment and overall public ranking, and it shows a clear relationship between total endowment and quality of the institution. (Michigan and University of Texas, Austin are outliers, but both rank in the top 20 nationally.) In addition, only UC San Diego, established less than 50 years ago, ranks higher than the UA, and with a lower endowment.

As is the case with most public universities, the percent of state allocation budgeted to the UA has steadily decreased over the past 20 years. Overall revenue has increased from $800 million to $1.4 billion, while the percentage of the annual state budget appropriation to the UA has decreased from 6.5 percent to about 3 percent during this same time period.

These data suggest that the UA has been able to accomplish great things with declining state appropriations. While the state has reduced overall funding for university research, the state also provides research funds through two new funding streams: the Technology Research Initiative Fund (TRIF) and Science Foundation Arizona. TRIF was created with a voter-approved increase to the state sales tax in 2000. Science Foundation Arizona, a private non-profit founded in 2007, leverages state funds with industry and private donations. The foundation has given the UA $6.7 million for graduate student fellowships, and $27.6 million for general research support.

**Figure 1: Total Endowment vs. Overall Public Ranking**

![Figure 1: Total Endowment vs. Overall Public Ranking](image)
Chapter 5: Criterion Four

The UA intends to improve its research rankings by increasing its acquisition of extramural funding. While the UA’s total research funding has increased over time, the research funding of other universities have increased at a greater rate. Therefore its research rankings have not shown improvement. Figures 2 and 3 show the trend of research expenditures and overall ranking among public research institutions in the 1996-2006 time frame. Research expenditures have grown from just under $280 million to over $535 million in this 10-year period, while the university’s ranking has remained fairly constant, with a dip in 2000. This suggests that the UA must significantly increase research revenues to move up in ranking.

As expected, there are significant differences in research funding by college or division, as shown in Figure 4. Clearly, science and health sciences comprise the bulk of the UA’s research revenues, which include large, multi-year grants such as the NASA grant to the Lunar and Planetary Laboratory to lead the Phoenix Mars Mission and the NSF iPlant Collaborative. Funding for medical research is, however, lower than capacity given the UA’s extensive focus on health sciences. This is caused in part by faculty losses in critical funding areas, an issue on which the UA intends to place new attention, with the aim of raising the university’s overall rankings.

Analysis of revenues from funded research clearly documents the university’s emphasis on learning by faculty and students. Yet much of the
knowledge creation and discovery in the areas of Fine Arts and Humanities, and to a lesser extent in the Social Sciences, is conducted without external grant funding. These activities are central to the university’s mission.

Additional measures of impact capture contributions in these areas, including citation rankings, which include publications from all fields at the UA. Table 2 shows the UA ranks well relative to its public AAU institution peers. Clearly, the UA has been able to continue intellectual discovery and shared scholarship even in the difficult financial times of the past 10 years. While citation counts demonstrate that UA research publications are having an impact, these still do not tell the whole story. Other measures are needed to highlight significant work in these fields (see below).

The National Research Council (NRC) evaluates doctorate programs in several individual fields based on quality of students, faculty research output, and program. Table 3 presents the most recent published NRC ranks of individual programs; new ranks are expected in 2010. While several of the doctoral programs are from the traditional science and health science fields, the UA has many ranked departments for which research output is difficult to measure by external funding. Philosophy, Music, History, and English are prime examples.

Table 2: AAU Public Institution Citation Rankings

<table>
<thead>
<tr>
<th>Institution</th>
<th>Year</th>
<th>Papers</th>
<th>Citations</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIV WASHINGTON SEATTLE</td>
<td>2002-2006</td>
<td>25,520</td>
<td>242,693</td>
<td>9.51</td>
</tr>
<tr>
<td>UNIV CALIF LOS ANGELES</td>
<td>2002-2006</td>
<td>26,378</td>
<td>241,102</td>
<td>9.14</td>
</tr>
<tr>
<td>UNIVE N CAROLINA CHAPER HILL</td>
<td>2002-2006</td>
<td>15,480</td>
<td>136,464</td>
<td>8.82</td>
</tr>
<tr>
<td>UNIV PITTSBURGH</td>
<td>2002-2006</td>
<td>17,539</td>
<td>148,513</td>
<td>8.47</td>
</tr>
<tr>
<td><strong>UNIV ARIZONA</strong></td>
<td><strong>2002-2006</strong></td>
<td><strong>13,657</strong></td>
<td><strong>102,529</strong></td>
<td><strong>7.51</strong></td>
</tr>
<tr>
<td>UNIV WISCONSIN MADISON</td>
<td>2002-2006</td>
<td>20,620</td>
<td>154,188</td>
<td>7.48</td>
</tr>
<tr>
<td>UNIV IOWA</td>
<td>2002-2006</td>
<td>11,303</td>
<td>83,354</td>
<td>7.37</td>
</tr>
<tr>
<td>UNIV MINNESOTA</td>
<td>2002-2006</td>
<td>21,588</td>
<td>156,884</td>
<td>7.27</td>
</tr>
<tr>
<td>OHIO STATE UNIV</td>
<td>2002-2006</td>
<td>17,329</td>
<td>114,928</td>
<td>6.63</td>
</tr>
<tr>
<td>PENN STATE UNIV</td>
<td>2002-2006</td>
<td>18,196</td>
<td>119,142</td>
<td>6.55</td>
</tr>
<tr>
<td>UNIV CALIF DAVIS</td>
<td>2002-2006</td>
<td>18,570</td>
<td>116,329</td>
<td>6.26</td>
</tr>
<tr>
<td>UNIV TEXAS AUSTIN</td>
<td>2002-2006</td>
<td>12,470</td>
<td>74,521</td>
<td>5.98</td>
</tr>
<tr>
<td>UNIV MARYLAND COLLEGE PARK</td>
<td>2002-2006</td>
<td>11,795</td>
<td>69,543</td>
<td>5.90</td>
</tr>
<tr>
<td>SUNY BUFFALO</td>
<td>2002-2006</td>
<td>6,034</td>
<td>34,982</td>
<td>5.80</td>
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<tr>
<td>UNIV ILLINOIS URBANA</td>
<td>2002-2006</td>
<td>15,867</td>
<td>90,443</td>
<td>5.70</td>
</tr>
<tr>
<td>MICHIGAN STATE UNIV</td>
<td>2002-2006</td>
<td>11,247</td>
<td>61,273</td>
<td>5.45</td>
</tr>
<tr>
<td>UNIV FLORIDA</td>
<td>2002-2006</td>
<td>19,080</td>
<td>102,728</td>
<td>5.38</td>
</tr>
<tr>
<td>FLORIDA STATE UNIV</td>
<td>2002-2006</td>
<td>5,834</td>
<td>30,963</td>
<td>5.31</td>
</tr>
<tr>
<td>UNIV MISSOURI COLUMBIA</td>
<td>2002-2006</td>
<td>7,210</td>
<td>35,618</td>
<td>4.94</td>
</tr>
<tr>
<td>TEXAS A M UNIV</td>
<td>2002-2006</td>
<td>14,749</td>
<td>69,011</td>
<td>4.68</td>
</tr>
</tbody>
</table>

Source: Association of American Universities - Publications and Publication Impact 2002-2006
in non-fiction writing was ranked second in the nation this year by Poets and Writers magazine (see Table 3).

The UA Dance and Creative Writing programs have some of the most competitive admissions standards in the nation. Thus, there is evidence the UA performs well in the arts and humanities relative to its peers.

**Interdisciplinarity and Collaboration**

The UA’s long-standing commitment to collaborative and interdisciplinary scholarship has eliminated many administrative barriers to such research. This institutionalized support encourages faculty to pursue collaborative research and involve students at all levels in the process. There is strong evidence of the value the UA places on interdisciplinarity. This has occurred through a widespread series of measures that affect nearly all aspects of the university, and through mechanisms that make every unit on campus accountable for interdisciplinary activity. The UA is a leader in interdisciplinarity, obstacles to which can be huge stumbling blocks at other universities.

For example, the Sponsored Projects Office makes the process of sharing grants and contracts across faculty and departments relatively easy by providing support for proposal preparation and post-award administration. The office provides forms on its website for projects with multiple principal investigators and advises researchers about difficulties that can arise without clear leadership roles among investigators. The university’s proposal routing sheet clearly shows how indirect cost returns and award credit can be shared across multiple units and investigators. This kind of support has resulted in a measurable increase in funded research that crosses departmental boundaries (see Table 5). Other offices that provide infrastructure support include the Office of Research and Contract Analysis, the Office of Technology Transfer, and the Office of Responsible Conduct of Research, the latter highlighted in the chapter on Criterion One.

The UA’s commitment and value attributed to interdisciplinary research is also found in guidelines for annual performance review and for promotion and tenure review. The Office of the Provost and the Office of the Vice President for Research post guidelines on how to evaluate interdisciplinary research, and the guidelines for promotion and tenure have a section for support.

---

**Table 3: National Research Council Ratings by PhD Program**

<table>
<thead>
<tr>
<th>Program</th>
<th>National Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>5</td>
</tr>
<tr>
<td>Astronomy</td>
<td>7</td>
</tr>
<tr>
<td>Philosophy</td>
<td>11</td>
</tr>
<tr>
<td>Linguistics</td>
<td>12</td>
</tr>
<tr>
<td>Sociology</td>
<td>14</td>
</tr>
<tr>
<td>Geography</td>
<td>19</td>
</tr>
<tr>
<td>Geosciences</td>
<td>19</td>
</tr>
<tr>
<td>Ecology &amp; Evolutionary Biology</td>
<td>21</td>
</tr>
<tr>
<td>Pharmaceutical Sciences</td>
<td>22</td>
</tr>
<tr>
<td>Physiological Sciences</td>
<td>23</td>
</tr>
<tr>
<td>Materials Science &amp; Engineering</td>
<td>28</td>
</tr>
<tr>
<td>Computer Science</td>
<td>33</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>34</td>
</tr>
<tr>
<td>Genetics</td>
<td>34</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>34</td>
</tr>
<tr>
<td>Economics</td>
<td>35</td>
</tr>
<tr>
<td>Political Science</td>
<td>35</td>
</tr>
<tr>
<td>Music</td>
<td>39</td>
</tr>
<tr>
<td>Electrical &amp; Computer Engineering</td>
<td>40</td>
</tr>
<tr>
<td>Psychology</td>
<td>43</td>
</tr>
<tr>
<td>Physics</td>
<td>45</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>47</td>
</tr>
<tr>
<td>History</td>
<td>48</td>
</tr>
<tr>
<td>Mathematics</td>
<td>54</td>
</tr>
<tr>
<td>Biochemistry &amp; Molecular &amp; Cellular Biology</td>
<td>57</td>
</tr>
<tr>
<td>English</td>
<td>58</td>
</tr>
<tr>
<td>Cell Biology &amp; Anatomy</td>
<td>63</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>79</td>
</tr>
</tbody>
</table>


---

"Many of the answers to medical problems are often similar to answers to engineering problems. I love that you can utilize tools and expertise that’s been developed over the last 100-plus years in mechanical engineering to solve problems related to human health."

Jonathan Vande Geest, assistant professor

letters for interdisciplinary candidates. In addition, the College of Social and Behavioral Sciences promotion and tenure guidelines codify\(^\text{12}\) the possibility of an interdisciplinary review for any candidate who wishes one.

As stated above, the UA’s commitment to discovery, innovation and collaboration continues even in this time of tight budgets. Recent infrastructure investment and reorganization of educational units support and emphasize interdisciplinary and collaborative efforts on campus. The examples provided in Table 4 demonstrate that interdisciplinary units and collaborations have been formed in many colleges, especially in the colleges of Humanities, Science, Social and Behavioral Sciences, and Agriculture and Life Sciences. During the 2009-2010 academic year, the Provost recently made available $300,000 for a new internal grants program to fund innovative discovery in the Arts, Humanities and Social Sciences, particularly for projects involving multi-investigator, cross-disciplinary and cross-college collaboration.

The link between interdisciplinary research and innovation was the focus of the 2009 Innovation Day Celebration. Examples of current and cutting-edge research and technology highlighted by the celebration are featured on videos.\(^\text{13}\)

Table 5 illustrates the growth of interdisciplinary and collaborative\(^\text{14}\) projects awarded from 2003 through 2008. While the majority of research projects are conducted by one principal investigator who serves in a single department, approximately 6 percent of all projects are interdisciplinary and 11 percent are collaborative. The table also illustrates how the emphasis on collaborative and interdisciplinary grants has paid off over the past five years, as the category of multiple investigator and multiple departments is one area where there is growth.

---

**Table 4: Example of Academic and Outreach Units that emphasize collaborative efforts**

<table>
<thead>
<tr>
<th>Academic Unit</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO5 <a href="http://www.bio5.org">http://www.bio5.org</a></td>
<td>Fosters creativity and facilitates collaboration between scientists in the Biomedical and Biotechnological fields.</td>
</tr>
<tr>
<td>Clinical and Translational Sciences Research Center (CATS) <a href="http://cats.med.arizona.edu">http://cats.med.arizona.edu</a></td>
<td>Provides resources for a fee to investigators in the clinical and basic medical sciences.</td>
</tr>
<tr>
<td>Institute of the Environment <a href="http://www.environment.arizona.edu/">http://www.environment.arizona.edu/</a></td>
<td>Facilitates cross-campus collaboration and excellence on environmental issues.</td>
</tr>
<tr>
<td>School of Earth and Environmental Sciences <a href="http://cos.arizona.edu/sci_interdisciplinary/earth_environmental_sci.asp">http://cos.arizona.edu/sci_interdisciplinary/earth_environmental_sci.asp</a></td>
<td>Produces new knowledge about earth and environmental processes and human-environment interactions.</td>
</tr>
<tr>
<td>School of Information Sciences, Technologies and Arts (SISTA) <a href="http://cos.arizona.edu/sci_interdisciplinary/informationSci_tech_arts.asp">http://cos.arizona.edu/sci_interdisciplinary/informationSci_tech_arts.asp</a></td>
<td>Promotes research in computational methods across disciplines.</td>
</tr>
<tr>
<td>School of Mind, Brain, and Behavior <a href="http://cos.arizona.edu/sci_interdisciplinary/mind_brain_behavior.asp">http://cos.arizona.edu/sci_interdisciplinary/mind_brain_behavior.asp</a></td>
<td>Is dedicated to the teaching and discovery of principles and mechanisms underlying minds, brains, and behaviors.</td>
</tr>
</tbody>
</table>

---

Interdisciplinary and collaborative research has been the basis of several UA research centers and institutes;\(^\text{15}\) a list of officially approved research centers and institutes is available in the document center. Their work falls into one or more of the categories by which the UA defines creativity and knowledge discovery: It is interdisciplinary/collaborative, innovative, international,
and/or translational; it improves the human condition; and/or it benefits the state economy. While all of these units are interdisciplinary and collaborative by design, a few are especially noteworthy due to the large amounts of external funding that they bring in, and because they demonstrate the broad needs of Arizona residents that are being served by their research.

To further support this level of collaborative, interdisciplinary research, several core research facilities have been formed to support state-of-the-art programs and maximum efficiency. Table 6 summarizes these very important core facilities.

---

**Table 5: UA Funded Interdisciplinary Research Projects (2003-2008)**

<table>
<thead>
<tr>
<th>PROJECTS</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>One PI - One Department</td>
<td>4,058</td>
<td>4,029</td>
<td>3,779</td>
<td>3,853</td>
<td>3,924</td>
<td>3,983</td>
<td>23,626</td>
</tr>
<tr>
<td>One PI - Multi Departments</td>
<td>15</td>
<td>23</td>
<td>32</td>
<td>40</td>
<td>48</td>
<td>73</td>
<td>231</td>
</tr>
<tr>
<td>Multi PI's - One Department</td>
<td>322</td>
<td>291</td>
<td>259</td>
<td>253</td>
<td>239</td>
<td>251</td>
<td>1,615</td>
</tr>
<tr>
<td>Multi PI's - Multi Departments</td>
<td>231</td>
<td>239</td>
<td>200</td>
<td>228</td>
<td>239</td>
<td>239</td>
<td>1,376</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,626</td>
<td>4,582</td>
<td>4,270</td>
<td>4,374</td>
<td>4,450</td>
<td>4,546</td>
<td>26,848</td>
</tr>
<tr>
<td>Interdisciplinary</td>
<td>5.3%</td>
<td>5.7%</td>
<td>5.4%</td>
<td>6.1%</td>
<td>6.4%</td>
<td>6.9%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Collaboration</td>
<td>12.0%</td>
<td>11.6%</td>
<td>10.7%</td>
<td>11.0%</td>
<td>10.7%</td>
<td>10.8%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

---

**DOLLARS**

<table>
<thead>
<tr>
<th>Category</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>One PI - One Department</td>
<td>$325,141,610</td>
<td>$323,739,662</td>
<td>$346,294,134</td>
<td>$336,745,203</td>
<td>$338,735,299</td>
<td>$349,526,146</td>
<td>$2,020,182,054</td>
</tr>
<tr>
<td>Multi PI’s - One Department</td>
<td>123,908,309</td>
<td>111,618,203</td>
<td>63,901,091</td>
<td>53,568,089</td>
<td>39,910,871</td>
<td>55,227,615</td>
<td>448,134,178</td>
</tr>
<tr>
<td>Multi PI’s - Multi Departments</td>
<td>70,818,764</td>
<td>71,751,456</td>
<td>74,288,507</td>
<td>63,341,480</td>
<td>74,870,508</td>
<td>77,556,110</td>
<td>432,626,825</td>
</tr>
</tbody>
</table>

| Interdisciplinary | 14.6% | 15.2% | 16.3% | 16.1% | 18.2% | 18.6% | 16.4% |
| Collaboration | 37.0% | 35.7% | 28.2% | 25.1% | 24.8% | 26.7% | 29.8% |

Source: UA Office of Institutional Research and Planning Support

Interdisciplinary Instruction and Research

Many of the UA’s interdisciplinary schools and programs grant degrees and are set up to allow faculty to hold tenure. These characteristics give a large amount of power to units and faculty practicing interdisciplinarity. One example is the College of Optical Sciences, which includes faculty from both science and engineering. In addition, the College of Agriculture and Life Sciences houses a number of interdisciplinary units including the Norton School of Family and Consumer Sciences and the School of Natural Resources and The Environment. The College of Science is home to the Laboratory for Tree-Ring

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*“To tackle the problem of large-scale production of algae for fuels and other products we have to have a better understanding of everything from the biology to the interfacing with existing petroleum processing plants. We’re looking at the whole thing, from growing algae to putting fuel in your tank.”*

Kimberly Ogden, chemical and environmental engineering professor, the UA’s principal investigator of a nearly $34 million grant to the UA-based National Advanced Biofuels Consortium.
**Table 6: UA Core Facilities and Research Laboratories**

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical Core Shared Service (ACSS)</td>
<td>Provides Arizona Cancer Center investigators with a facility and expertise in developing analytical procedures, designing sample collection schedules, developing sample handling and storage conditions, performing quantitative analysis of drug and chemical levels, and analyzing data.</td>
</tr>
<tr>
<td>Arizona Laboratory for Emerging Contaminants</td>
<td>Provides state-of-the-art analyses of organic and inorganic micro-pollutants related to water sustainability research. The goal is to develop novel analytical methods for effective detection and quantification of trace contaminants in real-world matrices, and to apply these methods to the diversity of sample types being investigated by researchers at Arizona’s three state universities.</td>
</tr>
<tr>
<td>Arizona Research Laboratories</td>
<td>Brings together UA researchers involved in solving critical scientific problems and generating knowledge for the future. The organization’s structure and values promote innovation through dynamic interdisciplinary collaborations. ARL has been a leader in interdisciplinary research since 1979.</td>
</tr>
<tr>
<td>Arizona Mass Spectrometry Consortium</td>
<td>Fosters interactions among researchers to offer mass spectrometry-based technology and expertise and services to investigators at the university and across the state and nation.</td>
</tr>
<tr>
<td>Biotechnology Computing Facility</td>
<td>Facilitates inclusion of computational methods and techniques at various stages of the discovery process across all life sciences disciplines, with the goal of simplifying and automating these processes through innovation, education and training. All services and facilities are available to UA faculty, staff and students, with limited services for off-campus collaborators and industry partners.</td>
</tr>
<tr>
<td>Cancer Imaging Shared Service</td>
<td>Provides access to a turnkey optical imaging system, and to pre-clinical and clinical imaging technologies. The CISS also offers a developmental component to initiate new research projects and oversees access to the wide range of image acquisition modalities, including bioluminescence imaging, MR, and PET/SPECT approaches for animal experiments. An image analysis facility acts as a central clearinghouse to consolidate and standardize state-of-the-art image processing and analysis routines.</td>
</tr>
<tr>
<td>Cellular Imaging Facility Core</td>
<td>Provides both routine and advanced capabilities in the visualization, quantification and interpretation of molecular alterations in tissues and cells following exposure to toxicants. The facility provides instrumentation and expertise for specialized imaging techniques, expertise in experimental design and implement and technical assistance for users, and standard microscopic services.</td>
</tr>
<tr>
<td>Genomics Core Shared Service</td>
<td>Provides complete support for gene expression profiling, as well as support for DNA-based applications, with priority given first to members of funding centers, then to other federally funded investigators at the UA, and finally to all other research investigators.</td>
</tr>
<tr>
<td>Informatics/Bioinformatics</td>
<td>Collects, stores, and makes available a variety of molecular and genetic data on cancer genomes. Established computational tools are used and new tools are developed as needed for analysis of all genome-related data. A variety of computer-related services for informatics support of research projects is also provided.</td>
</tr>
</tbody>
</table>
Table 6: (continued)

<table>
<thead>
<tr>
<th>Service Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mirror Laboratory</strong></td>
<td>Provides large, high quality optics for the Multiple Mirror Telescope on Mount Hopkins, the Magellan Telescopes in Chile, and the Large Binocular Telescope on Mount Graham. The Lab is developing the world’s largest spin-cast mirrors for the next generation of large telescopes, including the Large Synoptic Survey Telescope and the Giant Magellan Telescope.</td>
</tr>
<tr>
<td><strong>Proteomics Core Shared Service</strong></td>
<td>Provides Arizona Cancer Center investigators with a dedicated facility and expertise in analyzing proteins for their identity, quantity and function via state-of-the-art modern mass spectrometry and peripheral analytical instrumentation.</td>
</tr>
<tr>
<td><strong>Telescopes</strong></td>
<td>UA astronomers and graduate students have access to world-class observing facilities: Mount Graham International Observatory; Whipple Observatory Mount Hopkins; Las Campanas Observatory in Chile; Kitt Peak; Mount Bigelow; Mount Lemmon; Arizona Radio Observatory; and the UA Campus.</td>
</tr>
<tr>
<td><strong>Water Quality Center Laboratory</strong></td>
<td>Performs water, soil, waste, and plant, chemical and physical analyses including inorganic analysis of all types of water samples and soil, waste and plant extracts; elemental analysis of solid samples such as soil, plant and waste; carbon analysis of water samples; and other analyses.</td>
</tr>
</tbody>
</table>

Research. The College of Social and Behavioral Sciences encompasses a large number of interdisciplinary units in ethnic and area studies and houses the information science program. The College of Humanities has organized its language and culture divisions to support highly interdisciplinary approaches to humanities study. Interdisciplinary graduate education is a hallmark of the UA, and there are three specific ways in which interdisciplinary education is encouraged in graduate studies. The first is the requirement for both a major and a minor in the PhD degree where the minor must be recognized and approved by the minor department. The second is the Graduate Interdisciplinary Program (GIDP). The third is the numerous opportunities for interdisciplinary training grants and research opportunities for students.

The UA has 14 Graduate Interdisciplinary Programs (Table 7) involving nearly 700 faculty members from 14 colleges. In 2008, GIDPs produced 10 percent of all UA doctoral degrees. Several of these GIDP programs—Arid Lands Resource Sciences, Entomology and Insect Science and Second Language Acquisition and Teaching, to name a few—are unique to the UA as stand-alone programs.

As a result of its commitment to GIDPs and interdisciplinary education in general, the UA has been able to secure additional funding in this area. Good examples include NSF Integrative Graduate Education and Research Traineeships (IGERT) grants that train graduate students to tackle difficult problems with a multidisciplinary focus. To date, the UA has obtained four IGERTs:

- Whatever Happened to the Faculty? Knowledge Transfer and the Academic Workforce in the U.S. Funded in 2009, Change in
Networks, Higher Education, and Knowledge Societies (CINHEKS)\(^\text{17}\) analyzes the intersection of universities with the private-sector economy; how that affects the structure of academic employment; and how higher education systems globally are being modeled on the entrepreneurial American research university.

- Two grants in comparative genomics\(^\text{18}\) (2002-present) link functional genomics, computational biology, and evolution.
- Archaeological Science\(^\text{19}\) (from 2002-2007) with the foci of chronometry (absolute dating), reconstruction of past climate, environments and subsistence practices and on materials and technologies. Some of the research conducted demonstrates the convergence of art and science.\(^\text{20}\)
- Biology, Mathematics, and Physics initiative.\(^\text{21}\) Originally began as an IGERT grant (1998-2005) and then was funded by the BIO5 Institute as part of their Quantitative Biology Consortium. In 2009, NIH funded this initiative with a training grant in computational and mathematical modeling of biomedical systems.

The UA has many other externally funded training grants that provide interdisciplinary opportunities for UA graduate students, spanning such topics as:

- Graduate Training in Systems and Interactive Physiology, funded by the National Institutes of Health (NIH)
- Training Program in Cardiovascular Biomedical Engineering (NIH)
- Graduate Training in Biochemistry and Molecular Biology (NIH)
- Cancer Prevention and Control Training Grant (NIH)

### Table 7: UA Graduate Interdisciplinary Programs (GIDPs)

<table>
<thead>
<tr>
<th>Graduate Interdisciplinary Programs:</th>
<th>Year Established</th>
<th># Current Students F2009</th>
<th># Current Faculty</th>
<th>MASTER</th>
<th>DOCTOR</th>
<th>MINOR</th>
<th>Unique to UA?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Mathematics</td>
<td>1976</td>
<td>63</td>
<td>39</td>
<td>180</td>
<td>134</td>
<td>61</td>
<td>N</td>
</tr>
<tr>
<td>Arid Lands Resource Sciences</td>
<td>1964</td>
<td>35</td>
<td>17</td>
<td>1</td>
<td>44</td>
<td>22</td>
<td>Y</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>1997</td>
<td>38</td>
<td>38</td>
<td>18</td>
<td>21</td>
<td>13</td>
<td>N</td>
</tr>
<tr>
<td>Cancer Biology</td>
<td>1976</td>
<td>43</td>
<td>61</td>
<td>6</td>
<td>57</td>
<td>51</td>
<td>N</td>
</tr>
<tr>
<td>Cognitive Science</td>
<td>1986</td>
<td>-</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Genetics</td>
<td>1964</td>
<td>14</td>
<td>41</td>
<td>32</td>
<td>22</td>
<td>41</td>
<td>N</td>
</tr>
<tr>
<td>Global Change</td>
<td>1994</td>
<td>18</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Entomology &amp; Insect Science</td>
<td>1994</td>
<td>10</td>
<td>28</td>
<td>1</td>
<td>16</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>1988</td>
<td>27</td>
<td>46</td>
<td>9</td>
<td>51</td>
<td>63</td>
<td>N</td>
</tr>
<tr>
<td>Physiological Sciences</td>
<td>1989</td>
<td>68</td>
<td>64</td>
<td>103</td>
<td>76</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Remote Sensing &amp; Spatial Analysis</td>
<td>1975</td>
<td>20</td>
<td>27</td>
<td></td>
<td>120</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Second Language Acquisition &amp; Teaching</td>
<td>1990</td>
<td>62</td>
<td>70</td>
<td>20</td>
<td>114</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Statistics</td>
<td>1992</td>
<td>3</td>
<td>43</td>
<td>24</td>
<td>3</td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

Source: UA Office of Institutional Research and Planning Support
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**Accountability**

Extensive interdisciplinary activity at the UA is documented by an accountability process built into the institution. In addition to evaluating interdisciplinarity in performance reviews, all unit heads must report on the extent and impact of those activities. Academic Program Reviews require a section on demonstrated interdisciplinarity, and departmental and college annual reports to the Provost address related successes and challenges.

**Technology and Research Initiative Fund (TRIF)**

As mentioned earlier, TRIF invests in higher education and research through a 20-year sales tax increase approved by Arizona voters in 2000. At the UA, TRIF supports creative discovery in high-technology areas, translation of research results to clinical or commercial application, and education of a future workforce prepared for the knowledge-based economy of the 21st Century. TRIF-funded activities capitalize on research and teaching strengths that meet four areas of need important to Arizona residents:

- Bioresearch, which includes the BIO5 Institute, the McKnight Brain Institute, and the Arizona Clinical and Translational Research and Education Consortium
- Optical Sciences and Technology, which has especially strong ties with industry
- Water and Environment Sustainability, which includes Water Sustainability and Translational Environmental Research initiatives
- Education and Infrastructure, which includes distance learning through Anyplace Access for Arizonans, Critical Core Infrastructure, and Technology Transfer Infrastructure.

TRIF also funds the following programs and institutes:

- The Arizona Research Institute for Solar Energy (AzRISE), which creates global multi-disciplinary partnerships that integrate research, economics, public policy and education in the areas of solar energy conversion and new sustainability initiatives.
- Higher Education in Rural Southern Arizona Initiative, the goal of which is to develop a repertoire of high-demand electronic and hybrid courses and degree programs focused on regional needs. These are made available in partnership with community colleges and are supported by a network of highly accessible and technologically savvy faculty.
- The Education and Infrastructure program, which includes the Educator Development Plan, distance education through Anyplace Access for Arizonans, and online degree and certificate programs of the College of Nursing.
- BIO5, a collaborative bioresearch institute that brings together scientists in the five disciplines of agriculture, medicine, pharmacy, basic science, and engineering to solve complex biological problems related to preventing and controlling disease, feeding humanity, and preserving livable environments.
- Institute of the Environment, which collaborates across the university to understand, communicate, and solve the environmental challenges facing our world, nation, and state, and to help the people of Arizona seize opportunities to respond to these challenges.
- Water Sustainability Program, which provides science-based technical, economic, legal, and policy expertise necessary for water development, use and conservation the rapidly growing, increasingly urban state of Arizona.

UA finished 18th at the Solar Decathlon that was hosted by the U.S. Department of Energy in Washington D.C. [Photo by Adam Strauss]
International Activities

The global reach of the UA's research activities expands continually. For decades the university has had important research and outreach centers, funded under U.S. Department of Education Title VI, for Middle Eastern Studies and Latin American Studies. The UA Superfund Research Program has a strong international component in its U.S.-Mexico Binational Center for Environmental Sciences and Toxicology, which provides support for environmental science and toxicology training, research, and policy development and facilitates a dialogue between investigators and stakeholders on risk assessment and remediation of hazardous environmental contaminants prevalent in the Border region.

The UA has numerous other centers and research programs that clearly demonstrate its engagement with the rest of the world. (See Criterion Three for a discussion of international instructional programs.) These centers and programs reflect the UA's strong commitment to its land-grant mission. For example, the UA is a founding institutional member of the International Arid Lands Consortium, an independent non-profit organization dedicated to exploring the problems and solutions unique to arid and semiarid regions. The Udall Center for Studies in Public Policy is internationally known for its border research and environmental studies. The Bureau of Applied Research in Anthropology (BARA) is a unique academic research and outreach unit with a mission to place anthropology at the service of contemporary society and to advance knowledge of the human condition by addressing pressing issues of local communities. These centers are very much international and translational in scope and practice.

In addition to its infrastructure to promote interdisciplinary research, the UA has an infrastructure to support the development of international activity. The UA's Office of International Affairs encourages international research collaboration through its negotiation, facilitation and maintenance of all institutional relationships with partner universities and colleges worldwide. The office oversees the administrative and fiscal management of the Division of International Affairs and the Faculty Research Development Grant, Staff Professional Development Grant and the Visiting Scholar Grant programs. These grant programs bring distinguished international scholars to the UA, support UA faculty to develop and continue international research abroad, and provide exchange opportunities for UA staff. Finally, the Center for Measuring University Performance 2008 annual report lists 28 UA faculty who are Fulbright scholars, which ties the UA at third place with Michigan State (behind Ohio State and Penn State) among the top 16 public AAU institutions.

Several internal white papers have recently noted some challenges in the way international activity is supported at the UA. “The University of Arizona: A Global Land Grant Institution” speaks to the challenges in providing administrative support for international research projects and indicates a need for a more defined administrative focus on managing and encouraging international research initiatives. The recently created position of Vice Provost for Outreach and Global Initiatives takes a first step toward addressing this issue but still does not address the issue of managing international research projects. Provost Meredith Hay convened a workshop on developing international initiatives in Fall 2009, in part to address this concern over global initiatives. The white paper also notes the need for a well-defined place at the UA where people outside the university community can develop international research ties. The global portal on the UA website begins the process of creating a site for developing international research activities, but they remain dispersed and loosely, if at all, connected around campus. For example, the UA Office in Mexico City is supported by several units, from the College of Science to the Office of the Vice Provost for Outreach and Global Initiatives.

Translational Activities

The university embraces the focused definition of translational research provided by the NIH: “the process of applying ideas, insights, and discoveries generated through basic scientific inquiry to the treatment or prevention of human disease,” and a broader definition of research activities that lead to improvement of the human condition. The UA's emphasis on the latter definition clearly comes from its land-grant status and its tradition
of shared scholarship. Using the first definition, the UA clearly demonstrates a strong tradition of translational research by the work being conducted in several health sciences Centers of Excellence, such as the Arizona Arthritis Center, the Arizona Respiratory Center, the Sarver Heart Center and the Arizona Cancer Center. Provost Hay recently announced a new initiative in the area of translational medicine, to be administered by the BIO5 Institute in close collaboration with the colleges, that will attract “UA translational scientists who strengthen the bridge between research bench and clinic, (to) improve medical care in Arizona, raise our national reputation in scientific medicine, foster the development of our local biotechnology industry, and train physicians and other health practitioners to lead in this new, emerging discipline.”

One particularly novel but relevant medical application of technology developed from basic science is the work being conducted by a Science Foundation Arizona-funded Strategic Research Group program in conjunction with Raytheon Missile Systems to develop an early warning technology for skin cancer detection. This project maps and tracks skin lesions based on remote sensing algorithms that Raytheon created for U.S. Department of Defense missions.

Using a broader definition of translational research, the UA has for years applied basic research to efforts that can impact the human condition (see also Criterion Five). The Discrimination Research Group34 is a special project funded jointly by the American Bar Foundation, the Center for Advanced Study in the Behavioral Sciences, and the Ford Foundation. The group hosts a conference designed to bring together researchers, policy analysts and journalists to provide wide access to important, critical, and new social science research on employment discrimination and its application to the workplace and the courts. The Udall Center sponsors public-relevant, interdisciplinary research on such issues as environmental policy, primarily in the Southwest and U.S.-Mexico border region; U.S. immigration policy; and indigenous nations policy. The Native Peoples Technical Assistance Office (NPTAO)35 in collaboration with the American Indian Studies Program (AISP), is engaged in partnership with the U.S. Department of Agriculture’s Economic Research Service to stimulate innovative research on food assistance and nutrition issues and to increase participation of social scientists in these topics.

The UA Southwest Institute for Research on Women36 (SIROW) has a strong tradition of translational research. In 1997, community members in Pima, Cochise, Santa Cruz and Maricopa counties expressed a heightened concern about illegal substance use among adolescents and the lack of evidenced-based and effective treatment approaches for working with these youth. Several community-based agencies approached SIROW with these concerns. SIROW responded by writing several grants to study adolescent substance abuse treatment approaches, and succeeded in securing funds to collaborate with treatment agencies to conduct research on treatment processes and outcomes. Using a participatory framework, data was shared with, and interpreted by, community-based agencies’ personnel and interested community members. Data were also shared across 10 national sites.

Outcomes were compared and resulted in a deeper understanding of what treatments work and with whom, depending on the gender, ethnicity, and demographic background of the adolescent; the type and intensity of their substance use; their level of criminal involvement; and the co-occurrence of mental health disorders. This resulted in a book detailing effective programs, a national conference, and the sharing of evidence-based programs nationally. The Joint Meeting on Adolescent Treatment Effectiveness, chaired by SIROW in 2008 and scheduled for December 2010, specifically includes researchers, service providers, and adolescents and their families. In 2008, plenary sessions included key officials from NIH, internationally known researchers, and a featured performance by the Clean and Sober Theater, a teen theatrical group whose performances describe the effects of substance abuse on their lives. Community inspired research and responsive university researchers result in pro-
productive partners addressing critical community issues of concern. Such partnerships advance the science while expediting informed and effective community-based practices.

The university directly impacts the Arizona economy through the creation of products and businesses developed from its own research. The Office of Technology Transfer assists faculty in matters related to intellectual property, including interactions with commercial partners, and brings to market inventions and discoveries developed within the University for the public good. In recognition of the need to move forward with this kind of link between translational research and economic development, the Office of the Vice President for Research is creating the University of Arizona Research Corporation (UARC) (see also Criterion Two), which will simplify contracting and negotiating processes to facilitate links between UA research and the public and private sectors.

In addition, the University of Arizona Science and Technology Park is a research and development facility designed for fast-paced, high-growth technology companies from start-up to maturity and is one of the nation’s premier research and development facilities. The top-ranked McGuire Center for Entrepreneurship has served Arizona for over 25 years by mentoring more than 1,500 undergraduate and master’s-degree students in developing hundreds of viable ventures that add to the state economy. Some of these ventures are Ugallery.com, which assists emerging artists in selling their works; Barcoding Inc., which provides automated logistic support; and HJ3 Composite Technologies, which offers products to fortify building structures.

Other examples of how UA research has led to business ventures and has added income to the state economy include the development of Coplink, a software system developed by faculty in Management Information Systems that connects police officers in the field with main police databases; and Ventana Medical Systems, which was started in 1985 by a UA pathologist with the Arizona Cancer Center. Ventana was acquired by Roche Group in 2008 for $3.4 billion and now employs more than 800 people in the Tucson area. A number of websites facilitate the translation of UA research into practical applications to improve the state, national, and international economies and human welfare. For example, the UA manages AZMET, which provides Arizona meteorological information to help farmers know when to fertilize and water; the Water Resources Research Center, which provides informational pamphlets on native plants and related topics and finally, the Business and Economic Research Center, which provides annual economic outlook projections for the state of Arizona.

**Innovation and Economic Development**

The university’s success in translational research is consistent with its mission to improve welfare in Arizona and beyond. Information on recent discoveries and achievements can be found through UANews.org, which publicizes the important work and activities conducted by UA faculty and students that leads to innovation consistent with the UA mission. As shown in Table 8, UA projects result in approximately 100 invention disclosures, five entrepreneurial startups, and more than 40 license agreements annually. Clearly, UA creativity and knowledge discovery has market and societal value, yet Table 8 also demonstrates how long it can take from disclosure to an actual product. This large variety of activities is a way to contribute to the economy of the state and the country. Facilitating the translation of UA discovery into more products that have great use to society is an important way to bridge to the future.

Table 8 also illustrates the challenge of translating a broad spectrum of discoveries into economic development opportunities. While time is a concern, so are the institutional arrangements. The UA Research Corporation, noted above, will...
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help address these challenges. The Science and Technology Park also provides significant support for innovation and economic development.

Administrative Support for Research Activities

UA supports creativity and knowledge discovery through a solid infrastructure of offices, centers, student stipends, and internal grants. The infrastructure provides a number of university-level supports for research, although many colleges provide research support as well. For example, discovery includes the University Research Instrumentation Center, which strives to achieve excellence and leadership by introducing innovative applications to research and development sectors, including faculty, staff, students and private businesses. University Information Technology Services (UITS) includes the Office of

<table>
<thead>
<tr>
<th>Category</th>
<th>Breakouts</th>
<th>Fiscal Years</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2004</td>
<td>2005</td>
</tr>
<tr>
<td>Public Service</td>
<td>In Thousands</td>
<td>$55,104</td>
<td>$57,994</td>
</tr>
<tr>
<td>Number of Invention Disclosures</td>
<td>Total</td>
<td>95</td>
<td>102</td>
</tr>
<tr>
<td>Number of Unique Inventions Disclosures Resulting in Major Agreements</td>
<td>There is a two to three year lag in disclosures resulting in major agreements.</td>
<td>69</td>
<td>84</td>
</tr>
<tr>
<td>Percentage Resulting in Major Agreements</td>
<td>The most recent years are not fully reflective of future activity.</td>
<td>73%</td>
<td>82%</td>
</tr>
<tr>
<td>Number of Office Technology Transfer and Entrepreneurial Startups</td>
<td>Office Tech Transfers</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(approximately 75% are domiciled in Arizona)</td>
<td>Entrepreneurial Startups</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Number of Major Agreements with Breakouts for Licenses and Options</td>
<td>Total</td>
<td>39</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Licenses &amp; Options</td>
<td>25</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 8: UA Innovation Metrics 2004-2008

[Photo by Gail Burd]
Chapter 5: Criterion Four

Student Computing Resources (OSCR), Learning Technologies Center (LTC), and the unit formerly known as the Center for Computing and Information Technology (CCIT). In addition to the grants program noted above, the UA Vice President for Research and the UA Foundation offer annual faculty seed grants that provide junior faculty with up to $10,000 to jump start their research programs and help them qualify for larger outside funding. The UA also funds the Sponsored Projects Services office to provide contract and grant administration for research projects.

The university funds the Center for Professional Development, which offers a variety of training programs, including the Professional Success Institute, the University Leadership Institute, the Successful Supervisor Series, Career Success Strategies workshops, and general human resources courses.

Another way of valuing a life of learning is to ensure that all employees and their family members have the opportunity to complete university-level courses. Even in this difficult economic time, all benefits-eligible employees, in addition to their spouses and children, are eligible for tuition reduction; this also applies to employees of all state institutions.

Contributions to Society and the Arizona Economy

A high-quality education impacts the lives of UA students and their families beyond the training that the students receive. While some aspects of creativity and knowledge discovery are difficult to evaluate, it is important to measure the impact of research where possible. At the March 2009 Arizona Board of Regents meeting, President Shelton described how the Arizona economy is being fueled by research and innovation. For every $1 million of research and development expenditure in Arizona, another $1 million is generated through direct and indirect output in the state. Every new job in the research and development sector in Arizona results in an additional job in another sector. In 2008, the UA overall economic statewide impact was estimated to be 46,458 jobs, $1.9 billion in earnings, $113.8 million in city, county, and state tax revenues, and a total dollar impact of $2.8 billion. President Shelton also stated that for every $1 it receives in state funding, the UA generates $6.70 in economic impact.

UA research also has an impact on education. Undergraduate research assistants in science are two to three times more likely to go on to graduate school or medical school, which means students see the interaction with scholarly activities as having high value and prestige. Shared scholarship also keeps more high-achieving students in state and thus produces more high-quality graduates to contribute to the state workforce.

A UA degree, whether undergraduate, graduate or professional, has a strong positive economic impact on the degree-holder’s salary and thus on state tax revenues. Compared to a high school graduate, a university degree increases after-tax income at least 57 percent and as much as 199 percent, and taxable income increases at least 80 percent and up to 286 percent (see Figure 5).

As a land-grant university, the UA is committed to supporting lifelong learning across Arizona. In addition to the examples of translational research noted above and other areas of engagement (see also Criterion Five), the UA has a well-developed Cooperative Extension program that “takes the university to the people.” Cooperative Extension creates a statewide network of knowledgeable faculty and staff who provide lifelong educational programs for all Arizonans. Cooperative Extension provides timely, locally-focused, science-based information to the state’s agricultural produc-
ers, landowners, businesses, and homeowners to help their efforts to produce an abundant and safe food supply, improve their bottom line, and sustain Arizona’s natural resources. In the past decade, Cooperative Extension has broadened its programs to deal with emerging issues, such as the state’s growing population. Cooperative Extension’s community and economic development programs help residents, landowners and governments understand the dramatic demographic changes taking place in the state and ways to adapt to or mitigate those changes. Of particular relevance in the current economy are personal finance programs designed to enhance financial literacy and quality of life among individuals, families and communities. These programs provide consumers with the tools and knowledge to cope with economic stress, improve spending habits and reduce debt.

The UA Outreach College is engaged with faculty across the university to develop programs that promote lifelong learning around the state and beyond. The Outreach College has grown considerably in response to demand for distance learning programs and the growing number of sites at which the UA provides courses around the state. The Osher Lifelong Learning Institute (OLLI) is an independent, non-profit organization dedicated to meeting the learning needs of individuals 50 and older without mandating tests or grades. The institute is partially supported by the Bernard Osher Foundation and is one of over 100 OLLIs in the United States. It is housed in Tucson, the retirement community of Green Valley south of Tucson, and in Marana, a rapidly growing community north of Tucson.

Over the last decade 135 undergraduates have conducted rigorous summer research in science, math, engineering and social science fields as part of the McNair Achievement Program, a U.S. Department of Education graduate school preparation program for low-income, first-generation college students in their junior or senior years with GPAs of 3.0 or higher. 75 percent have enrolled in graduate school.

Core Component 4a: Summary

There is ample evidence that discovery and lifelong learning are essential to the university’s mission and programs. UA faculty and staff have created numerous centers to promote discovery and engage the public in their activities. The UA excels in translational research and interdisciplinary and collaborative discovery. In order to bridge to the future, attention will be given to improving the university’s research funding and to translating even more of our discoveries into direct societal usages. Improvements in some areas of research infrastructure as well as focused attention to translation will help us move in these directions.
CORE COMPONENT 4B:
The organization demonstrates that acquisition of a breadth of knowledge and skills and the exercise of intellectual inquiry are integral to its educational process.

The University of Arizona has fostered an institution-wide environment that promotes learning and development of discovery and that fosters the skills necessary for the next generation of undergraduate and graduate students to address important societal issues through a wide range of disciplines. The goal is to create leaders that will enhance economic stability by developing a more robust high-technology economy and to create workers that can support all aspects and levels of that economy from sciences to engineering to culture. To achieve this goal, students at all levels have opportunities to become part of the intellectual inquiry and discovery process that is integral to all of the UA’s educational and research programs.

Innovative and Interdisciplinary Knowledge Discovery

The UA’s strengths in creativity and knowledge discovery benefit undergraduate students whose classes are often taught by leading research faculty in nationally ranked programs. In a 2009 survey of graduating seniors, 55 percent said they worked with faculty on a research program or study, and 41 percent said they participated in a performance, public presentation or design project. Outside-funded research grants help support students financially: 17 percent of all employed UA undergraduates are paid from university grants and contracts.

The UA College of Science encourages undergraduate research with faculty through the Director of Undergraduate Research, a website, and a faculty research data-base. The Honors College also maintains a database to connect undergraduates with faculty conducting research in the students’ chosen areas of inquiry. In 2009, this very successful program resulted in 589 undergraduate honors students completing a research-based honors thesis, with 28 of the students receiving research grants in support of their thesis work.

Many other programs provide opportunities for undergraduates to conduct research with UA faculty; several target minority undergraduate students. The Graduate College offers the Summer Research Institute to minority undergraduate students in order to increase their opportunities for success and to create a pool of strong candidates for UA graduate programs. In October 2009 the Chronicle of Higher Education ranked the UA fifth and sixth in the nation for awarding doctorates to American Indians and Hispanics, respectively.

A 2009 Alumni Survey shows 38 percent of former UA undergraduates were then attending graduate school—an indication that UA undergraduates benefit from both traditional and non-traditional forms of discovery. The Graduate College GRE Workshop offers undergraduates, who aspire to graduate school opportunities to take practice tests, participate in group instruction and meet with instructors.

For graduate students, UA support is primarily through student stipends and professional development as research and teaching assistants (see also Criterion Three). In most graduate degree programs, students will conduct independent research while working with faculty advisors. Special fellowships support graduate students in various fields; they include Arts, Humanities and Social Sciences Graduate Fellowships, the Medical Student Research Program, Science Foundation Arizona Fellowships, the Social and Behavioral Sciences Research Institute, and the Marshall Foundation Dissertation Fellowship, as well as travel grants. The UA also provides services that aid students in completing their graduate degrees. For example, approximately 25 percent of all graduate students are international. Many of them connect with the Center for English as a Second Language for intensive language training, tutoring, workshops, and mentoring from community members. The Writing Skills Improvement Program is available to all students—un-
undergraduate and graduate—as well as faculty. The Graduate College, in collaboration with the Graduate and Professional Student Council and the Office of Instruction and Assessment (OIA), hosts a graduate orientation each semester to train graduate teaching assistants to be more effective in the classroom. The OIA also offers a Certificate in College Teaching that helps graduate students build their teaching portfolios.

**International and Global Education**

The UA main campus is 65 miles from the U.S.-Mexico border, a proximity that has led to the development of valuable cross-cultural learning opportunities. Students learn new ways of interpreting and approaching problems from a cross-disciplinary perspective.

The following programs are examples of those that develop bi-national partnerships to address common issues. They also exemplify the UA’s commitment to shared scholarship.

- Center for Latin American Studies[^63] has thematic strengths in environmental studies, border studies, power and inequality, and history and culture.
- Mexican American and Raza Studies[^64] promotes leadership and empowerment among Mexican Americans.
- Water Resources Research Center[^65] is part of the effort to begin work on the new United States-Mexico Transboundary Aquifer Assessment Program to evaluate water quality in the US-Mexico border region.
- Udall Center[^66] has a set of projects focused on U.S.-Mexico ecological, climatic, and water systems.
- US-Mexico Binational Center[^67] has a mission to provide and support environmental science and toxicology training, to encourage research and policy development, and facilitate dialogue between investigators and stake-

### Table 9. Student and Faculty Engagement in International Programs 2008-09

<table>
<thead>
<tr>
<th>STUDENTS</th>
<th>#</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>University-sponsored Programs</td>
<td>160</td>
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<tr>
<td>International students studying at institution</td>
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<td>Countries they represent</td>
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<th>FACULTY</th>
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<td>University Faculty Participating Internationally/Globally</td>
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</tr>
<tr>
<td>Teaching: Faculty leading educational programs</td>
<td>35</td>
</tr>
<tr>
<td>Research: Faculty involved in global/international research</td>
<td>201</td>
</tr>
<tr>
<td>Scholarship: Faculty-scholars</td>
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</table>

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<th>International Faculty</th>
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<td># international visiting faculty</td>
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</tr>
<tr>
<td># of countries represented</td>
<td>61</td>
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<table>
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<th>Strategic Partnerships</th>
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<td>Current partnerships</td>
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</tr>
<tr>
<td>New partnerships under negotiation</td>
<td>70</td>
</tr>
</tbody>
</table>

Source: Division of International Affairs
holders on risk assessment and remediation of hazardous environmental contaminants prevalent in the border region.

UA undergraduate, graduate and professional students have opportunities to study in more than 50 countries outside the United States. The UA ranks 15th among doctoral and research institutions in the number of students studying abroad, according to 2008 data of the Institute for International Education. Table 9 shows that 1,932 students and 247 faculty members participated in some sort of international activity in 2008-09.

Table 9 also shows that the UA boasts a strong international student cohort at both the undergraduate and graduate levels. In the 2008-2009 academic year, 2,913 international students representing 120 foreign countries were enrolled in undergraduate and graduate programs. In 2007, international students made up 2.8 percent of undergraduate enrollment and 21.2 percent of graduate enrollment.

As shown in Figure 6, the UA has seen a dramatic increase in its number of exchange programs in the past 10 years.

The International Student Scholarship Program provides academic, merit-based scholarships to new undergraduate international students. However, in line with national trends, the number of international students in both undergraduate and graduate programs has declined since 2002: a 4.2 percent decrease for undergraduates and 24.3 percent for graduates (see Figure 7).

Figure 6. Historical Development of Student Exchange Programs (1999-2007)

Source: Office of International Affairs

Figure 7. International Enrollment (2002-07) in Counts and Percentages

Source: Office of International Affairs
Chapter 5: Criterion Four

The UA has great strength in programs that facilitate language acquisition for students and faculty:

- The College of Humanities houses world-renowned faculty and highly-ranked undergraduate and graduate programs in the departments of Spanish and Portuguese, French and Italian, German Studies, East Asian Studies, and Russian and Slavic Studies.

- The College of Social and Behavioral Sciences is home to the second-largest Hebrew Language program in the country and the largest Turkish language program.

- The College of Humanities also houses the Center for English as a Second Language (CESL), a self-funded unit accredited by the prestigious Commission on English Language Program Accreditation, the top professional honor a university ESL program can earn. CESL recruits many international students to the UA through numerous global networks.

- The interdisciplinary Second Language Acquisition and Teaching (SLAT) doctoral program is comprised of 16 collaborating departments from many colleges and is designed to provide rigorous advanced training for researchers, teachers, and administrators. The UA also has developed strong academic ties with the Middle East. The Center for Middle Eastern Studies is the longest-running U.S. Department of Education Title VI National Resource Center on Middle Eastern studies in the country. The Center promotes teaching and research on Middle East language and studies throughout the university and fosters public understanding of the Middle East through extensive outreach to local and regional schools and the wider community. The non-political Middle East Studies Association fosters study of the Middle East, promotes high standards of scholarship and teaching, and encourages public understanding of the region and its people. Its programs, publications, and services enhance education, further intellectual exchange, recognize professional distinction, and defend academic freedom.

Translational Research in Instruction

Many of the university’s translational research efforts routinely involve undergraduate and graduate students. Several examples of shared scholarship are noted above and in the Criterion Five section on Engagement, but others warrant mention because of their unique contributions. They include:

- BIOS5 Institute, which coordinates research internships for undergraduates with BIOS5 faculty and the bioscience industry. Each student is matched with a research faculty mentor appropriate to the student’s area of interest.

- The Interdisciplinary Computational Thinking and Plant Biology Research Program, designed for students majoring in computer science, mathematics, physics, or engineering. Research focuses on the use of computational thinking methods to solve questions in plant biology.

- Mount Lemmon SkyCenter, a public science learning facility located at a 9,157-foot elevation in the Santa Catalina Mountains north of Tucson.

- The Science Education Partnership Award Program, which helps provide K-12 science teachers develop effective tools for teaching modern biology.

- The College of Medicine’s Medical Student Research Program and its innovative Curriculum on Medical Ignorance, which extend medical education beyond classroom lectures and hospital and clinic clerkships. Since 1981, approximately 575 medical students have been awarded either short-term fellowships or full-time research experiences that often lead to acquiring MD/PhD and other combined degrees.

Students in a phonetics lab use equipment that records oral and nasal airflow and oral air pressure. Linguistics labs are outfitted for research and teaching in articulatory phonetics, acoustic phonetics, speech perception, psycholinguistics, and speech technology. [Photo by Christine Scheer]
Support for Student Engagement with Intellectual Inquiry

A number of programs support the UA philosophy that students should acquire a breadth of knowledge and skills and learn the importance of intellectual inquiry. Examples include:

- **Undergraduate research opportunities:** These include paid opportunities that come from training grants and research grants, often in the sciences. Volunteer and for-credit opportunities allow students to work in any area where a faculty member is willing to mentor them (see also Criterion Three).

- **Campus-wide lectures:** Numerous lecture series are available for students and the general public. Their focus ranges from specialized monthly departmental colloquia to invited lecture series that are campus-wide. Examples of the latter include:
  - College of Science “Edges of Life Lecture Series,” which offers perspectives in biology, medicine, technology and philosophy and, in the 2009-2010 academic year, a series on the “Mind and the Brain”
  - UA Optics Valley Lecture Series
  - Center for Creative Photography Lectures Series (with exhibitions)
  - Eller College Distinguished Speaker Series.

- **Libraries and Center for Creative Photography:** The UA Libraries and the Center for Creative Photography acquire, curate, manage and connect students to information resources and provide training in their use.

In addition to the research opportunities noted above, graduate students benefit from the UA’s recent effort, mirroring a national trend, to develop Graduate Certificates designed to enhance the education of graduate and professional students and to provide continuing education to professionals. They cover topics ranging from early modern studies, to mining occupational safety and health, to museum studies.

**Core Component 4b: Summary**
The UA excels in providing its students and community with a wide range of resources and programs aimed at acquiring knowledge and promoting discovery. The UA has great depth in interdisciplinary course work and quality research, as well as outreach centers that cover areas as diverse as water resources and second-language acquisition. The UA demonstrates this through programs on- and off-campus, including extensive study-abroad opportunities. UA programs engage undergraduates, graduate students, and the general public. To bridge to the future, the UA will focus on expanding interdisciplinary opportunities for students, creating more resources for faculty to obtain extramural funding, and expanding translational research, broadly defined.

**CORE COMPONENT 4C:**
The organization assesses the usefulness of its curricula to students who will live and work in a global, diverse, and technological world.

The UA General Education Program is designed to provide students with foundational learning in a variety of disciplines in order to help them meet the challenges of the 21st century. Courses within the program “encourage students to develop a critical and inquiring attitude, an appreciation of complexity and ambiguity, a tolerance for and empathy with persons of different backgrounds or values and a deepened sense of self.” The UA requires that “one course in a student’s degree...
In addition to the courses that satisfy the Gender, Race, Class, Ethnicity or Non-Western Area Studies requirement, courses in the Tier One Traditions and Cultures strand have learning outcomes that address culture and diversity. Questions about these learning outcomes have been embedded in the Teacher Course Evaluations (TCE) for the approximately 40 course or section offerings per semester in Tier One Traditions and Cultures. Analysis of the TCEs for Fall 2008, Spring 2009, and Fall 2009 indicate that 88 percent of students agree with the statement, “This (course) helped me to understand the value of culture in daily life.”

The General Education program also includes information literacy standards, and all of its courses are expected to enhance at least one of the following five student abilities:

- to determine the nature, extent, and sources of information needed
- to access information effectively and efficiently
- to critically evaluate information and information sources
- to use information effectively to accomplish a specific purpose or complete a specific project
- to understand the economic, social, legal, and ethical issues surrounding the access and use of information.

Since 2008, approximately 40 General Education courses have been reviewed for learning outcomes and other program requirements, all were found to address at least one of the five information technology standards, and most addressed the majority of the standards.

The UA offers an international studies major through the Honors College, but plans are to move the major to the Colleges of Letters, Arts, and Science to more fully engage the student body in international studies. The recent creation of the School of Government and Public Policy, home to the International Studies Association, also provides students with new opportunities to learn about and prepare for careers in foreign service.

The UA ranks 15th among doctoral and research institutions in the number of students studying abroad (Institute for International Education,
and offers study abroad opportunities in more than 50 countries for undergraduate, graduate and professional students. In 2007-2008, 1,846 UA students participated in study abroad and student exchange programs.

The UA Biomedical Research Abroad: Vistas Open! (BRAVO!) program is one example of a program designed to increase student preparation for a global, diverse, and technological world. Since 1992, over 200 undergraduates have been placed in biomedical labs in over 35 countries. These students travel on their own as UA “scientific ambassadors” to a foreign research group. The program is assessed in several ways, including: reviewing evaluations completed by both students and foreign mentors at the end of the students’ stay in the host group; tracking students subsequent career paths and making note of international involvement; and noting publications and presentations that arise from work in which the students are involved. The assessments have led to program improvements.

Students’ evaluations in the early years of the program indicated students had problems with cultural adaptation to their host country. BRAVO! developed a two-evening cultural orientation to help students deal with loneliness. The orientation includes activities like playing and processing a card game developed by Médecins San Frontières (Doctors without Borders), designed to simulate the feelings one has upon entering another culture where one does not know all the unspoken rules. Although all students report experiencing loneliness since implementing the orientation, they also report knowing how to handle it. And unlike in the first years of the program, no student has returned early from a BRAVO! placement. In 2007, a study was done of students’ disciplinary and cultural gains in three UA science programs with international exposure, including BRAVO!, Semester at Sea, and the Undergraduate Biology Research Program in which students interact with foreign nationals in research groups on the UA campus. The study confirmed that the BRAVO! immersion approach gives students greater disciplinary and cultural gains than either of the other two programs.

In 2009, the UA also created a new position of Vice Provost for Outreach and Global Initiatives as a means of bridging UA engagement with global issues. A new website provides improved coordination of student and faculty activities in the research and outreach areas.

The UA also has made significant investments in information technology to help prepare students for an increasingly technological world. All residence halls are wired for Internet access, and while recent budget cuts have hurt, a 2009 11-unit case study that reached nearly 1,000 students and 150 faculty indicated that respondents felt the technology in UA classrooms was adequate. The case study (see also Criterion Three) also indicated that UA library resources were highly used and valued by students and faculty.

Additional evidence of UA students’ preparation for life and work in a technological world is the phenomenal growth of the university’s web-based course management system Desire2Learn (D2L). Instructors and students are increasingly reliant on the instruction and assessment tools D2L provides. From the Spring 2005 semester through the Fall 2009 semester, total student seats in D2L courses grew from 15,530 to 107,398 (see Figure 8). This was accompanied by growth in the total number of courses using D2L, from 269 in Spring 2005 to 2,496 courses in Spring 2010. The UA currently is working on integrating D2L with the Turn-It-In application, widely used across the nation to check for plagiarism in students’ work. In 2009, the UA D2L system added Illuminate, an online survey tool, and Elluminate, an online discussion and meeting application. A web-based course management system such as D2L prepares students for interactive online environments that emulate the technology-rich academic and work environments they will encounter in the future.

Since March 2006 when the Arizona Board of Regents first approved a mandatory student fee for information technology and the libraries, the
Chapter 5: Criterion Four

UA has dedicated the fees to enhancing the student learning environment and to increasing the UA’s capacity to meet digital expectations. This mandatory fee, set to increase to $350/year in Fall 2010, is guided by the fact that “UA students have high expectations for learning and living in today’s digital environment, including wireless access in high traffic public locations and in all campus outdoor areas, library materials that are digitally available, and appropriately equipped classrooms. This fee will be directed to upgrade and expand the University’s capacity to provide this essential operating environment.”

Core Component 4c: Summary

The UA recognizes the importance of preparing students for a diverse, global, and technological world and provides many such opportunities for undergraduate and graduate students through General Education, Study Abroad and Student Exchange programs. In support of this effort, the UA created the office of the Vice Provost for Outreach and Global Initiatives. The university has committed resources and instituted a mandatory information technology/library student fee to meet students’ technology expectations. The UA also has significantly supported and expanded the use of its course management system Desire2Learn, and includes information literacy in its General Education program expectations.

CORE COMPONENT 4D:

The organization provides support to ensure that faculty, students, and staff acquire, discover, and apply knowledge responsibly.

As stated previously, the UA is a student-centered research university, and its number-one focus is the development and responsible use of knowledge in service to society. The university’s activities embrace students and faculty in both instruction and research.
Like many universities, the UA demands of its students and faculty responsible conduct in the classroom and beyond. And yet, a tragic act of violence occurred at the University of Arizona in October 2002, when a nursing student shot and killed three faculty members and then himself. Like other universities that have experienced such violence, the UA increased its effort to promote not only integrity, but also responsible classroom behaviors in support of the acquisition of knowledge and discovery. The Dean of Students Office is responsible for the Code of Academic Integrity for undergraduates and its website contains information for both faculty and students. The office produced an innovative video to promote behavior conducive to learning.

The Vice President for Research, Graduate Studies and Economic Development oversees sponsored research and monitors how research money is used. The office provides institutional support for research and develops new resources and new technologies to benefit the university and the state. In 1998, the UA Faculty Senate passed the “Code of Research Ethics” to define the obligations of UA researchers to the public and to colleagues, students and trainees. Further documentation for researchers is provided by the Sponsored Projects Services Office in the Handbook for Principal Investigators. Section 2.13.09 of the University Handbook for Appointed Personnel states the policy and procedures for investigations of misconduct in scholarly, creative, and research activities at the University of Arizona (see also Criterion One).

Since the last accreditation review, the UA has established the Office for the Responsible Conduct of Research (ORCR). This office facilitates UA research programs’ adherence to federal compliance regulations and disseminates information that fosters integrity in UA scholarship and research. In order to fulfill this mission, the ORCR oversees several offices and programs, including the Human Subjects Protection Program and a workshop series on the responsible conduct of research.

The UA also provides significant support and opportunities for staff to acquire, discover, and apply knowledge responsibly. In 1999, the Department of Human Resources conducted interviews and focus groups with more than 400 university community members to identify the competencies most essential for their success. That research resulted in two professional development tracks. The University Leadership Institute was a 20-session series designed for those with management responsibilities. The Professional Success Institute was a 10-session series designed for individual contributors. Approximately 800 participants enrolled in one of these programs between 2000 and 2010.

In 2004 the UA launched the Successful Supervisor Series, a six-part program focused on the basic needs of new supervisors, such as how to hire and how to manage underperformers. Approximately 200 individuals enroll in this series each year.

In 2006, in response to emerging employee needs related to career growth, Human Resources launched a series on Career Success Strategies. Courses focus on topics ranging from the power of networking to career resiliency. In response to several hundred layoffs during fiscal year 2009 and fiscal year 2010, job search workshops were added to the offerings.

The Human Resources unit that was originally responsible for coordinating professional development programming and organizational development consulting was abolished in 2002 in response to budget cuts. Programming responsibilities were distributed to other within the department. Budget cuts within the last two years have made it necessary to curtail some previously offered professional development programs including the University Leadership Institute, Professional Success Institute, and Successful Supervisor Series. A smaller suite of program offerings will be available and that curriculum is in development, with shorter in-class experiences supplemented by online learning. Content will
focus heavily on issues related to organizational flexibility, efficiency and inclusion. A special emphasis on “moving into management” also will be introduced to support those moving into their initial supervisory roles.

**Core Component 4d: Summary**

In the last 10 years, the University of Arizona has revamped its research integrity structure and other programs providing critical information to faculty, staff and students. This extensive list of offices and programs and their associated activities illustrate the UA’s commitment and support to help faculty, students, and staff acquire, discover, and apply knowledge responsibly.

The UA can bridge to the future by focusing on four areas:

- **Focus on the Strategic Plan:** UA administrators and faculty should work together to ensure the University Strategic Plan is realistic and specific enough to guide decision making and budgeting in the area of creativity and knowledge discovery. Budget allocations should be linked to achieving the goals of the Strategic Plan to promote discovery in areas that are most likely to benefit from small amounts of investment.

- **Invest in Faculty Creativity:** The UA should build upon current strengths, such as biotechnology, environmental research, and border studies to create new opportunities for discovery and the translation of those discoveries into innovative practices and products that will improve the human experience.

- **Generate New Resources For Creativity and Discovery:** The UA’s long-term goal of increasing its endowment should be intensified to ensure that it is better able to weather future financial storms and invest in creativity and knowledge discovery. This will also help to stabilize faculty salaries.

- **Reveal and Communicate Creativity and Discovery:** The UA must find ways to better capture and communicate accomplishments outside of traditional measures of grant dollars in order to value a broader spectrum of research activities.
CHAPTER 5 – CRITERION FOUR: ENDNOTES

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85 http://orcr.vpr.arizona.edu/node/196/
Chapter 6: Engagement and Service (Criterion Five)
CHAPTER 6
Criterion Five: Engagement and Service

As called for by its mission, the organization identifies its constituencies and serves them in ways both value.

INTRODUCTION

As Arizona’s land-grant university, the University of Arizona cherishes its tradition of serving and working with the public. The responsibility to “improve the human condition of the people of Arizona” is underscored in the 2011-2015 University Strategic Plan.

This chapter examines the university’s strong record of engagement and service from the standpoint of its core responsibilities to the people of Arizona, as well as its participation in broader discussions at the national and international levels. The UA views engagement as active, reciprocal, and sustainable partnerships with constituencies within and beyond the campus community that are valued by all parties, rather than the more conventional understanding of outreach and service that casts the institution of higher learning in the dominant role.

Among the many outstanding examples of UA engagement are:

- **BIO5 Institute** was launched in 2001 to facilitate collaboration among several scientific disciplines at the university and to develop partnerships with bioscience companies and organizations in the region in order to further information exchange, training and discovery. Since 2001, BIO5 has introduced 15 start-ups whose breakthroughs include new technology for gene discovery and a drug to prevent colon cancer, now in the final stage of development.

- **Center of Excellence in Women’s Health**, started in 2003, is dedicated to improving the health of all women. The center works locally with the Pima County Cervical Cancer Prevention Partnership, bringing together local school districts, community health centers and public health entities to improve prevention of cervical cancer. This is especially relevant in Arizona, where the population is 30 percent Hispanic—nearly twice that of the nation as a whole—and because Hispanic women are at increased risk for cervical cancer. The center is also working with Arizona’s Medicaid program to collect data on Hispanics’ participation in clinical trials.

- **Arizona State Museum**, founded in 1893, is the largest anthropology museum in the southwest and an affiliate of the Smithsonian Institution. It houses the world’s largest collection of whole-vessel southwest American Indian pottery, many of the earliest examples of Navajo textiles, and other artifacts and historic documents. Arizona State Museum administers the Arizona Antiquities Act and partners with state and federal officials to enforce conservation statutes and to assist with repatriation.

- **The Norton School of Family and Consumer Sciences** has received $6 million in federal funds to help military parents identify high-quality childcare and youth programs. The funding will support a collaborative network that includes the UA Cooperative Extension, other universities, and non-government and community-based organizations that serve children and families of military personnel enduring frequent and lengthy deployments overseas.

- **The UA Poetry Center** has partnered with local elementary schools to create a “Teaching Artists” program to encourage creative writing by young learners. Undergraduate and graduate students in creative writing, education and literature teach integrative, dynamic lessons in imaginative writing to K-5 students. Residencies culminate in the publication of student anthologies and performances in schools and at the Poetry Center.
Chapter 6: Criterion Five

The program will be broadened next year to include collaboration with the university’s science outreach programs.

- The UA announced in June 2010 a new partnership with Pima County designed to ensure the sustainability of the county’s hospital and to better serve its patients, while enhancing training opportunities for UA health sciences students. The collaboration builds on a longstanding relationship between the county hospital and UA health sciences, and it involves the integration of two private entities affiliated with the College of Medicine: University Medical Center, the university’s main teaching hospital, and University Physicians Healthcare, the UA medical practice.

In evaluating UA engagement, the university is guided by the 1999 report of the Kellogg Commission on the Future of State and Land-Grant Universities, which recommended that “institutions transform their thinking about service so that engagement becomes a priority on every campus, a central part of the institutional mission.” The Kellogg Commission outlined a set of key characteristics for what they term “an engaged university.” They include responsiveness; respect for partners; academic neutrality; accessibility; integration; coordination; and resource partnerships.

In 2006, the Carnegie Foundation introduced its Community Engagement classification for universities that elect to apply for the recognition. As Carnegie defines it, “Community Engagement (is) the collaboration between institutions of higher education and their larger communities—local, regional/state, national, global—for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity.”

The Kellogg and Carnegie initiatives were a response to increasing concerns about diminishing taxpayer and legislative support for public universities and to the criticism—deserved or not—that university research is often far removed from the public interest. For the UA, these concerns are immediate and compelling, as the impact of the economic downturn hit hard in Arizona and the budgets of all three state universities were reduced by unprecedented amounts. State funding for the UA alone was reduced by more than $100 million over the last two fiscal years (see also Criterion Two).

As the UA celebrates its 125th anniversary, it is taking part in a national dialogue about what it means to be a land-grant university in the current decade. Using the Kellogg Commission’s definition of engagement and the characteristics noted above, this chapter analyzes what it means to be a public land-grant university and how well the UA fulfills the criteria. The analysis is framed around three questions asked in over 20 in-depth interviews on and off campus, as well as through the analysis of documents found both on the UA website and collected for the self-study. The interviews collected information about the factors that lead to successful engagement, the factors that reduce the possibility of success, and the changes that could be identified to enhance the UA’s capacity and ability to engage with partners outside of the university.

Among the websites used to analyze UA engagement are the new UA Outreach and Extension web portal1 and Global Engagement Gateway2 still being developed. When completed, both will provide considerable access to UA programs.

CORE COMPONENT 5A:
The organization learns from the constituencies it serves and analyzes its capacity to serve their needs and expectations.

University Administrative Organization

The last 10 years have witnessed a series of reorganizations designed to better support university interactions with its constituencies. Before 2007, research-centered engagement, outreach and service, as well as economic development, were largely overseen by the Vice President for Research, the Dean of the College of Agriculture and Life Sciences (CALS), and the Director of Cooperative Extension, a division of CALS. Teaching-centered activities and faculty research were under the Provost. All other engagement
activities, including corporate, government, and community relations, were overseen by a Vice President for University Advancement.

In 2007, an administrative reorganization eliminated the University Vice President for Advancement position and created two new posts: a Vice President for Outreach, who works to further the university’s connections with its constituents and a Vice President for External Affairs, who is primarily responsible for communications and public relations.

In the 2009-10 academic year, the above structure changed. Oversight of engagement and service is now divided among four senior administrative offices: the Vice President for External Relations; the Executive Vice President and Provost; the Vice President for Research, Graduate Studies, and Economic Development; and the Vice-Provost for Outreach and Global Initiatives and Dean of the Outreach College. Only the last office is devoted exclusively to matters of public engagement and outreach. The Alumni Association, parts of the University of Arizona Foundation, and all UA deans are also charged with community engagement. Many current and potential external constituents find the changes in organizational structure confusing. The two web portals noted above will provide considerable access, yet the UA currently does not have one point of contact to connect constituents to potential UA partners. The self study did find that once connected, constituents often succeed in becoming fully engaged.

**Measuring Engagement**

The UA Strategic Plan uses two indicators—public service expenditures and numbers of first professional degrees awarded—to measure expanding community engagement and workforce impact. Both suggest improved engagement over the past 10 years. The university has not developed standardized definitions or indicators of the impact of community engagement activities, but annual reports of senior administrative offices, colleges, and individual centers and institutes offer information. However, less than 10 percent of the units reporting describe communication with stakeholders impacted by the programming.

The university’s engagement with constituencies appears to be on the increase, based on the amount of gifts and grants received in support of service to constituents. Each year over the last decade, public service funding has accounted for 6 to 9 percent of all gifts and grants to the UA. The total amount received increased from $16.7 million in 1999 to $45.3 million in 2008.

**Engagement in Research, Instruction and Outreach**

Three colleges that exemplify the university’s commitment to engagement through research, instruction and outreach are described below. The choice of these colleges is based in part on interviews conducted in 2009 with more than 20 internal and external constituents.

**College of Agriculture and Life Sciences**

The traditional core of the College of Agriculture and Life Sciences, (CALS) engagement with constituencies is Cooperative Extension, which partners with other agencies, farmers, ranchers, families and youth in all 15 Arizona counties and on six Indian reservations. Strong state support for Cooperative Extension is illustrated by the Legislature’s 2006 approval of a $1.5 million “decision package” to hire 12 faculty for the system. The state support is mirrored by the commitment of CALS faculty and staff to engagement with constituents.
Cooperative Extension’s contributions include 4-H youth development programs for about 100,000 youth annually from counties all across the state and programs that promote leadership and community development and that create aspirations for higher education among this vital age group. Other contributions include agricultural education and support; family financial literacy programs; support services for grandparents raising grandchildren; and other services that promote the health and well-being of children, adults and families.

Cooperative Extension provides essential education, community development and other services and builds a wealth of good will toward the UA. Best known are the extension agents who are university faculty working with local farmers, ranchers, agricultural businesses, community organizations, and children, youth and families. They live and work in the communities they serve, develop long-term relationships with constituents, and have active advisory boards. Consequently, they learn from their partners.

Cooperative Extension agents also include College of Agriculture and Life Sciences faculty who work with county-based faculty and colleagues from the UA colleges of engineering and medicine, with local schools, and with community groups. Cooperative Extension faculty also collaborate in seven agricultural research and education centers around the state.

The Cooperative Extension 2007 annual report shows that more than 234,000 people were involved in Cooperative Extension programs statewide, including over 10,000 trained volunteers. In addition to programs mentioned above, these programs included Climate Sciences Applications, the Master Gardener Program, Master Consumer Advisors, the Summer Agricultural Institute, the Center for Rural Leadership, Small Steps to Heath and Wealth, and Sports Fitness Nutrition Education. Three-fourths of these activities are supported by grants and contracts, rather than by state and federal funds.

The CALS dean also served as the university’s Vice President for Outreach from 2007 through 2009. The result was dynamic leadership by an experienced and influential senior administrator who also empowered subordinate program directors to take important initiatives. It is no coincidence that the white paper proposals for the development of both engagement portals noted above originated in CALS.

**College of Education**

Engagement activities in the College of Education (COE) are rooted in teaching and research. They focus on the professional development of students in the college’s pedagogy and curriculum, the effort to find jobs for education graduates, and the research—often based in community schools—of college faculty. All this fosters close ties with school districts and individual elementary, middle and high school teachers. These ties are professional but reinforced by long-standing social networks that form around shared interests and goals. Much of this work takes place off-campus, where university faculty and students work alongside the constituents they serve, sharing information and learning from each other.

In August 2006, COE began a path-breaking initiative, the Wildcat Charter School for students in 6th through 8th grades. The school’s mission is to provide high-quality science, technology, education and math (STEM) education to students from at-risk neighborhoods. Recent analysis found demand for both increased access to the school at earlier ages and improved engagement with the UA campus. In response to this, the school will be expanded to include elementary grades in 2011, and the school has moved closer to the UA, only one mile away. The new proximity increases both the potential of and reality for improved mentoring of Wildcat School students by UA faculty and students.

In 2007-08, COE created the Office for Educational Outreach to better coordinate existing programs and promote new partnerships with regional school districts and charter schools. The office also facilitates K-12 outreach by individual faculty from many other colleges on campus. This effort enhances teacher training for undergraduate and graduate students, as well
as in-service and outreach for K-12 educators throughout southeastern Arizona.

The Department of Educational Leadership has teacher-training programs with the Tohono O’odham Nation, Marana Unified School District, Pima Community College, and Pima County’s youth suicide prevention program.

The Department of Teaching, Learning and Socio-cultural Studies hosts the Annual Conference on Literature and Literacy for Children and Adolescents; the Worlds of Words International Collection of Children’s and Adolescent Literature; the CATS Literacy Workshop, which pairs graduate-student tutors with selected school children; and international literacy and professional development programs for teachers in Mexico and Central America.

The College of Education has benefited from the state-funded Technology and Research Initiative Fund (TRIF), through which it receives money to support STEM teacher training. The college also has joined with Arizona State University and Northern Arizona University to create a premier early childhood research project, based at the UA. The $27 million grant is from First Things First, a state agency that was created with revenues generated by the 2006 passage of Proposition 203, which increased the state’s tobacco tax. The universities will examine how improvements in access to and quality of educational and health services impact early childhood development from birth through age five. The study will track these children for up to 20 years and is the state’s first large-scale, longitudinal study of the impact of health care and education on children in the birth-through-five age group.

Mel and Enid Zuckerman College of Public Health

The College of Public Health is noted for its engagement with and outreach to under-served public constituencies throughout the state, especially in rural communities, on tribal reservations, and with border healthcare providers. The college facilitates collaborations with faculty and research professionals from other colleges, and it has partnerships with local, state and federal agencies for emergency health planning in the event of a natural disaster.

The college’s contributions to UA engagement and service are many. It houses the State Office of Rural Health, is a partner of the state-funded Arizona Area Health Education Center, and operates the Center for Health Equality, among other programs. They also include:

- The Border Health Service Learning Institute, a collaboration with the Arizona Department of Health Services and the Southeast Arizona Area Health Education Center. Its overall goal is to engage public health students in service-learning experiences designed to reduce health disparities along the Arizona-Mexico border, while increasing students’ public health competencies.

- The college’s Canyon Ranch Center for Prevention and Health Promotion, which works with local neighborhoods and communities along the Arizona-Mexico border to enhance chronic disease prevention and control in underserved populations.

Public Health also has partnerships with Head-Start Centers; the Sunnyside/Elvira Advocates for Health Coalition, which serves the largely low-income Sunnyside Unified School District; the Arizona Center for Health Preparedness; and researchers in Sonora, Mexico. The college also is part of a National Institute on Occupational Safety and Health research project on border human rights abuses.

The Vice Provost for Outreach and Global Initiatives

The Vice Provost for Outreach and Global Initiatives oversees a number of programs, including UA South, the UA’s branch campus based in Sierra Vista, 90 miles southeast of Tucson, with additional campuses in Douglas and Nogales in southeastern Arizona. UA South serves nearly 1,000 full-time and part-time students in 19 degree programs ranging from teacher education to computer science, and it is a critical
part of expanding the reach of UA programs throughout Arizona.

The Vice Provost for Outreach and Global Initiatives also oversees the UA Outreach College, which offers evening and weekend credit and non-credit classes on and off the university’s main campus, and it collaborates with other colleges, programs, and departments to share information, work toward common goals, and coordinate budgeting and technology requirements. The Outreach College’s 2008-2012 strategic plan articulates a strong commitment to partnerships with mutual benefits.

The Office of International Affairs serves as the international relations office for the UA and is responsible for supporting the negotiation, facilitation and maintenance of all institutional relationships with foreign partner institutions worldwide. It provides services to international professors and research scholars and their sponsoring UA departments. It assists international students by acting as their liaison with academic and other departments, as well as local, state, federal and foreign agencies. It coordinates opportunities for foreign study on a summer, semester, and yearly basis. Finally, the office provides first-time passport acceptance services for U.S. citizens, international student and faculty identity cards for Americans traveling abroad, and photos for various application needs. UA students, staff and the public are all welcome on a walk in basis.

Core Component 5a: Summary

The successful programs described above sustain long-term partnerships within strong social networks built upon face-to-face contact and trust and mutual respect with administrative practices for sharing information, solving problems, and reporting outcomes. The programs have energetic and capable leaders, well-defined missions, and strong cultures of collaboration and collective decision-making. They manage their budgets well, though sources of essential funding vary significantly among programs. They each succeed in integrating engagement activities with research, instruction, and outreach.

This analysis also found, however, that while many units strive to evaluate the quality and impact of their engagement activities, the UA lacks an assessment tool for measuring the breadth of engagement for the institution as a whole or in part. The UA would benefit from having a comprehensive database to identify the full range of programs and activities and to measure costs and benefits.

Core Component 5b: The organization has the capacity and the commitment to engage its identified constituencies and communities.

The university’s high level of commitment to public engagement strengthens its excellence in research, teaching, and creative expression. Many of the university’s most successful research and instructional projects are linked to engagement and provide great opportunity to increase our commitment to translational research and service learning. The current and potential capacity for engagement has been shaped by structural factors related to administration, the internal allocation of resources, and cultural factors related to shared values and goals.

This section describes programs that show clear capacity for and commitment to engagement, particularly in translational research and the arts and humanities, as well as programs that have faced funding challenges that impact their core activities.

Three examples illustrate the university’s commitment to and tremendous capacity for engagement and partnership: the BIO5 Institute, Biosphere 2, and The Norton School of Family and Consumer Sciences. The first two are new since the previous North Central Association accreditation review, while the third has significantly expanded its activities and raised its profile nationally over the past decade. All three transcend university organizational boundaries and extend deeply into the public sphere through research and instruction.
BIO5 Institute
BIO5 Institute was created in 2001 to promote and facilitate collaborative scholarship among faculty and research professionals working in disciplines housed in five colleges, including Medicine, Science, Pharmacy, Engineering, and Agriculture and Life Sciences. Since its founding, faculty from Social and Behavioral Sciences and other colleges also have become involved through shared hiring initiatives. BIO5 has active community advisory boards for science and business, and maintains an outstanding web portal, BioGate, which contains detailed information on UA faculty and their research in the life sciences.

In 2007, BIO5 received a $50 million National Science Foundation grant to administer and take part in the iPlant Collaborative, a web-based consortium of national and international researchers in plant sciences.

BIO5’s director for business development has worked with the UA Office of Technology Transfer and community partners to launch 15 new bioscience companies over the past nine years. They include:

- bioVidria, which has designed a new technology to improve gene sequencing processes
- Luceome, a drug discovery company with its own technology for measuring the effectiveness of experimental drugs against specific diseases
- Cancer Prevention Pharmaceuticals, which is developing a colon cancer prevention drug that it hopes to bring to market in three years.

In 2007, BIO5 moved into the newly opened Thomas W. Keating Bioscience Research Building, a striking architectural addition to the cluster of buildings adjacent to the Arizona Health Sciences Center. By 2009, approximately 150 faculty members were affiliated with BIO5.

The institute has identified the following five key research initiatives: The Bioengineering Consortium, the Drug Discovery Initiative, the Genome Structure and Function Consortium, the Quantitative Biology Consortium, and Translational Research in Agriculture and Medicine.

Partial funding for BIO5 comes from the Technology and Research Initiative Fund (TRIF), the result of a measure approved by Arizona voters in 2000, which increased the state sales tax to support K-12 education and scientific research at Arizona’s three universities. TRIF enabled academic departments and programs throughout the UA to expand faculty and research staff and to fund new laboratories and technology. TRIF has contributed about $38 million to BIO5 over the past nine years.

BIO5 is considered one of the leading bioscience organizations in Arizona. It has benefited from a reliable source of funding through TRIF, a well-defined mission, dynamic leadership, and an administrative structure that enables effective communication, consultation, and transparency among its many stakeholders. Its administrative structure reflects the collaborative design of the organization; it serves to share information, promote partnerships, lend technical and financial support to its members, and coordinate research activities with other parts of their mission. Teaching, workforce development and educational outreach are integral to all BIO5 activities.

BIO5 arranges internships with industry for both undergraduates and graduates; maintains an active student club, BIO5 Ambassadors; and sponsors KEYS, an internship for high school students in BIO5 laboratories. BIO5 also organizes the Arizona K-12 Science Teacher Symposium, an annual event with professional development workshops and a resource fair, and sponsors BIOTECH, an in-service program that provides professional development for teachers in kindergarten through 12th grades, as well as classroom visits, equipment and material support in middle and high schools.

Biosphere 2
Biosphere 2 is another example of a highly successful effort to expand capacity for engagement and service through research and outreach. The organization has leveraged an initial investment

Pete and Paula Fasseas Cancer Clinic at UMC North
by a private foundation to attract new partners from the private sector and to earn external fellowship and grant support for its participating scientists and educators. Like BIO5, its mission includes translational research, educational outreach, and workforce development. And like BIO5, advisory boards play a big role in Biosphere 2’s planning and administration.

Biosphere 2—its developers identified planet Earth as Biosphere 1—is a 3.14-acre glass-enclosed environmental research facility built with the support of private philanthropy in the 1980s on a 40-acre campus north of Tucson. Educational and community outreach is integral to the Biosphere 2 mission, building on its history as a favorite tourist destination since 1991, when scientists began a three-year experiment of living and working inside the sealed structure.

Biosphere 2 was opened to outside researchers and the public in 1994. Its ownership and administration have gone through changes, with Columbia University managing the structure from 1996 to 2003 and the UA taking control in 2007. Biosphere 2’s advisory board represents a broad partnership with private sector stakeholders, scientists at the UA and other research universities, and non-profit organizations. Global climate change is a focus of UA research.

The variety of programs offered and the magnitude of participation and visitation is impressive. Biosphere 2 has about 80,000 visitors each year. In 2009 alone, a program funded by Science Foundation Arizona brought about 300 STEM teachers to programs aimed at retention and in-service trainings. Biosphere 2 runs a popular series of public events that include the Science Saturday program aimed at school children and the Let’s Talk Science series with about 16 lectures each year.

In 2009, Biosphere 2 contracted with the Earth Education Research and Evaluation Team, a project of the UA College of Education, to address several goals:

- to learn how to redesign or develop new public visitor tour programs
- to improve visitor marketing and services in order to increase the number of first-time and return visitors to Biosphere 2
- to increase public understanding of science research being done at Biosphere 2
- to design and select new exhibits on science and sustainability
- to develop grants and programs related to public perceptions of science.

The evaluation included a survey of visitors and interviews with internal stakeholders. The findings confirm that “B2” meets the expectations of most visitors and that most gain knowledge from their visit. The analysis led to new goals, including developing a way to overcome the existing “one size fits all” tour.

Norton School of Family and Consumer Sciences

The Norton School defines its mission as integrating translational research, educational outreach, and workforce development. It also benefits from fully-engaged advisory boards and energetic and forceful leadership.

In 2008 the Norton School of Family and Consumer Sciences moved into the newly opened McClelland Park, a $25 million facility that was built with donations from more than 2,000 individuals and from corporate donors. The Norton School includes two academic divisions, Family Studies and Human Development and Retailing and Consumer Sciences, both of which offer undergraduate and graduate degrees. The Norton School also features three research units, including the Frances McClelland Institute for Children, Youth and Families; the Terry J. Lundgren Center for Retailing; and the Take Charge America Institute for Consumer Education and Research. As part of the College of Agriculture and Life Sciences, the Norton School also supports expanding Cooperative Extension programs in family and consumer sciences as well as 4-H youth development.

One of the Norton School’s most innovative and successful programs is called Credit-Wise Cats, which was started in 2000 by the UA chapter of Students in Free Enterprise, or SIFE. Credit-Wise Cats teaches students how to manage
their finances, avoid the negative consequences of credit card use, and make informed financial choices as they move toward adulthood. Members of SIFE, who spend thousands of hours each year leading about 90 personal finance workshops for student groups, residence halls, high schools and community groups, still teach the classes. Credit-Wise Cats has proved to be an important outreach program, with students teaching workshops, seminars, and orientations to targeted peer groups, including freshmen and Arizona Assurance scholars, who are selected for scholarships and social support programs to help them succeed at the UA.

Credit-Wise Cats also has had support from Take Charge America, a non-profit, credit-counseling organization that partnered with the Norton School in 2003 to form the Take Charge America Institute for Consumer Financial Education and Research. The institute develops programs based on cutting-edge research to empower schools and community organizations to raise the personal financial knowledge and skills of youth and young adults.

Take Charge America was so impressed with the Norton School’s programs that in 2007, it moved its Family Economics and Financial Education (FEFE) program from another university to the Norton School. After research showed that financial illiteracy is prevalent among middle and high school students, FEFE was expanded into a nationwide financial literacy program that educated 167,000 middle school and high-school students during the 2009-2010 school year. In addition, FEFE’s online learning-based curriculum is distributed free of charge to more than 17,000 educators and 500,000 middle-school and high-school students nationwide each year.

The Association for Financial Counseling and Planning Education honored FEFE with its 2003 Outstanding Education Program award. In March 2010, the UA nominated the program for the Association of Public and Land Grant Universities’ C. Peter Magrath Community Engagement Award.

Translating Research Into Engagement

The UA excels at creating the conditions for public-private partnerships that bring the results of UA research to the public. Here are some excellent examples of such innovative activities and programs, some of which result from the university’s location in the desert southwest.

Arizona Research Institute for Solar Energy (AzRISE), identifies new ways of generating solar energy and how to incorporate them into solutions with the potential for broad public impact. The Institute brings together researchers from both science and engineering.

NaturArte is a collaboration with Mexican conservationists that aims to preserve the biodiversity of the northern Gulf of California. School of Art students and faculty travel to Mexico to the conservation and education organization CEDO—the Center for the Study of Deserts and Oceans—on the northern Gulf, where they engage in creative problem solving with Mexican marine ecologists and local small businesses. For example, CEDO helped local oyster fisherman start a restaurant in the Mexican town of Puerto Peñasco. UA art students and faculty then painted a beautiful mural on the walls of the restaurant, increasing their appreciation—and that of local residents and tourists—of the local marine environment.

The Arizona Area Health Education Center (AZAHEC), a state-funded program authorized by the federal Health Resources and Services Administration, is housed in the UA College of Nursing. AZAHEC works collaboratively with public schools to encourage students to pursue careers in the health professions. It also partners with community-based organizations to recruit professionals to underserved areas, particularly

“It is a rewarding feeling to know that a group of people are willing to invest so much in my education, so much so that it has given me the motivation to excel in academics and at my job as a teacher’s aide to pre-school students.”

Giau Le, Arizona Assurance Scholar
in rural and minority communities. AZAHEC works with faculty from the colleges of Medicine, Nursing, Pharmacy, and Public Health to develop and pilot innovative, sustainable solutions to Arizona’s shortage of culturally competent health care professionals.

SEED [pod] The UA Solar Decathlon Team, made up of students and faculty from the School of Architecture, was one of 20 international contestants selected to develop the Solar Energy Efficient Dwelling, or SEED [pod] for the U.S. DOE 2009 competition. A showcase for sustainable architecture, the program’s goal is to increase public awareness of the opportunities for solar powered innovation.

Improvement Areas in Capacity and Commitment

The Arizona State Museum, the UA Museum of Art, the Center for Creative Photography, UA Libraries, and the Flandrau Science Center have been landmark institutions for decades, drawing thousands of local residents and out-of-town visitors and scholars to the university. All have faced significant challenges, including staff reductions and program eliminations, as a result of financial stresses facing the entire university.

Arizona State Museum

Founded in 1893 as the official archaeological repository for Arizona, the Arizona State Museum (ASM) administers the Arizona Antiquities Act, works with state officials to enforce conservation and preservation statutes, and houses the only conservation laboratory in Arizona. Its holdings include the largest collection of Southwest Indian pottery in the world, Navajo textiles, ethnographic photography, archived papers and field notes, historical records from the Spanish and Mexican periods, and art of tribal peoples in Sonora and Chihuahua, Mexico. ASM has public exhibition space, a library, a special collections archive, research laboratories, and a bookstore and gift shop. In 2007, some 45,000 people visited ASM or attended at least one of its many programs.

ASM faculty members participate widely in research, outreach and instructional programs. The museum and its affiliate programs play an important role in supporting research and training, especially for Native American students.

In fiscal years 2008 and 2009, ASM faced substantial reductions in funding that led to salary reductions and more than a dozen lay-offs, including the registrar and other research professionals. ASM anticipated the current decrease in state funding and developed a community fund-raising board, a membership program, a series of education-based tours of the southwest and Mexico directed by researchers, and a docent program. The Museum and the Flandrau Science Center were additionally impacted in the fall of 2008, when plans to move both programs into the City of Tucson’s downtown redevelopment district were suspended. Once free to the public, the museum has begun charging admission. Because it now must appeal to a wider audience, Arizona State Museum is expected to become even more engaged in the community, finding new ways to maintain the quality of its collections and research, while making them relevant and interesting to wider audiences.

Flandrau Science Center

Flandrau Science Center, which includes the Grace H. Flandrau Planetarium and the Mineral Museum, has for decades been a symbol of the university’s commitment to educating the public and has been a favorite attraction for local residents and tourists. Flandrau has recently undergone a restructuring, through which it now reports to Biosphere 2, a unit within the College of Science. The restructuring is intended to resolve confusion about Flandrau’s future, while providing the College of Science with a focal point for K-12 outreach in science education and for public education in general.

In August 2007, the UA entered into an agreement with Tucson to build a $130 million museum complex for the Flandrau Science Center and the Arizona State Museum on the west bank of the Santa Cruz River as part of the city’s downtown revitalization effort. Funding was to come from the Rio Nuevo Tax District, which
allowed a portion of state sales tax revenue to be spent on revitalization. The economic downturn that began in 2008 put those plans on hold. During this period, the Flandrau Planetarium was closed to the public, although the observatory and Mineral Museum remained open and offered limited public lectures called the Science Café. The recent reopening has included a new schedule for public planetarium shows.22

**UA Museum of Art**

The UA Museum of Art23 features permanent exhibitions of painting, sculpture, and other fine arts from its five permanent collections, as well as visiting shows from other museums. The museum attracts more than 30,000 visitors annually, including students from local schools, and maintains an ongoing schedule of gallery tours and special events. Grant support enables the museum to offer educational programs for children in kindergarten through 12th grade, as well as collaborative outreach activities involving students and faculty from the art department.

The Museum of Art also has endured budget cuts in the last two years, leading to significant reductions in operating expenses and staff layoffs, which last year included the museum’s chief curator. Cuts will compromise future engagement with artists and private galleries from the vibrant and nationally recognized art communities throughout the region.

**The Center for Creative Photography**

The Center for Creative Photography (CCP),24 part of the UA Libraries, was founded in 1975 by then UA President John Schaefer, who secured the commitment of renowned photographer Ansel Adams to donate his entire photographic archive to the university. CCP houses other famous collections as well and produces exhibitions, hosts traveling exhibits from other institutions, and publishes books in association with the University of Arizona Press and other publishers. In 2007, CCP received more than 30,000 gallery visitors and more than 12,000 library visitors, while sponsoring 45 different events. The center has active partnerships throughout the country.

Despite tremendous success in fundraising and obtaining additions to its collections, the Center has not been exempt from budget cuts. It has lost two outstanding directors in the last three years. A new director, who has extensive experience in both libraries and visual images, arrived in July 2010. Like other important and highly visible key examples of public engagement, budget cuts and personnel changes put this program at risk for decreasing capacity to engage with the community.

**UA Libraries**

No campus resource is used by more students than the Main Library, the cornerstone of the UA Libraries system.25 And for many faculty, especially in liberal arts disciplines, no campus resource is more critical to scholarship and teaching. In 2007, the Association of Research Libraries ranked UA Libraries, including the Law and Health Sciences libraries, which are administered as separate units, ranked 19th among public universities. The Library system supports a variety of public engagement activities beyond its primary functions. Special Collections and the Center for Creative Photography offer public lectures and special exhibits. In collaboration with their primary sponsor, the School for Information Resources and Library Science, the UA Libraries participate in the Knowledge River program for professional training in public service, including a collaborative grant to support Hispanic and Native American librarian training. UA Libraries also runs a program of undergraduate volunteers, Peer Information Counselors, to facilitate users’ access to collections and online systems. LessonLink26 is a collaborative effort with K-12 and community college educators in the region to promote library skills and to prepare school-age children for higher education.

Since 2000, the UA Libraries’ successful digitization efforts have ensured that their holdings are widely accessible to students, faculty and the community, and the quality of the collection has continued to develop. Student and faculty satisfaction has been very high. Nonetheless,
UA Libraries face significant challenges. Budget cuts have forced a dramatic loss of faculty and academic professional positions, a decline in the last six years of 47 positions, from 226 FTEs in 2002 to 179 FTEs in 2008. Since 2001-02, the Libraries’ Information Access Budget (IAB) has been exempt from campus cuts but has been ravaged by inflation, with price increases since 2001-2002 totaling $6.4 million. Because there have been no increases in the base IAB during this time, the Libraries’ buying power has been reduced by at least $500,000 every year. To compensate for these price increases while continuing to buy necessary resources for the university, the libraries have relied on group purchasing for savings, reallocated funds internally, eliminated reserve funds, and pursued a student library fee and allocated a portion of that money annually to the IAB. The libraries communicate regularly with faculty to ensure that the diminished access budget meets the highest priority needs. Following faculty input, the library has reduced acquisition of books, journals, bibliographic databases and monographs to save $1.9 million since 2004.

These losses bring to the fore concerns about the capacity of UA Libraries to move toward a future with investment and programming equal to or better than it is well known to have. Research libraries are essential to the future of strong universities, and public access to them can be a vital source of support for the institution as a whole.

Core Component 5b: Summary

In the last decade, the creation of ambitious new programs demonstrates the UA’s capacity and commitment to identify the financial and human resources that will serve the changing needs of internal and external constituencies, while anticipating future needs. Successful initiatives have strong community advisory boards and energetic leadership. They foster scholarship and student learning, and they have significant opportunities to supplement state funding with external grants and gift giving.

Over the same period, chronic budget reductions have forced changes in the internal allocation of resources that raise concerns, including among constituencies, about the university’s future ability to sustain and develop several programs that are widely recognized as essential to the public missions of the university. Despite financial obstacles, UA leadership continues to look for ways to bridge to the future (see Chapter Two for additional discussion), while seeking improved mechanisms for identifying and evaluating engagement.

**CORE COMPONENT 5C:**

The organization demonstrates its responsiveness to those constituencies that depend on it for service.

In the past 10 years, the UA has dramatically improved its engagement with many community groups and organizations. Through the activities of university presidents and individual faculty members, the UA has made concrete changes to the ways it interacts with constituents. The university may continue to find new ways to improve communication with constituents and to develop new measures of responsiveness, but that will have more to do with reporting practices and information flow rather than indicating a structural lack of responsiveness.

The UA also has made significant advances in the last decade with respect to community relations, especially with regard to historically underrepresented constituencies. Efforts include the creation in 2000 of six Community Advisory Boards with representatives of the Hispanic, African American, Asian and Pacific American, Native American, disabled and LGBTQ (lesbian, gay, bisexual, transgender and questioning) communities who advocate for, and promote engagement with, faculty, students and staff in their groups. The UA also established a Campus Community Relations Committee to work with community service organizations and with local government and neighborhood partners.
Responding to Native American Constituents

Over the last 10 years, the UA has made a strong commitment to outreach and service within Native American communities. The Office of the President includes a new Special Advisor on Native American Affairs, who coordinates student recruitment, facilitates research initiatives, and mediates partnerships with tribal governments. The Office promotes leadership programs for Native American students and maintains an active roster of clubs for current students and alumni. The Vice President for Research oversees the Native Peoples Technical Assistance Office. The UA also has been at the forefront of developing training modules for working with native populations on projects that require human subjects protection approval. Native American programs throughout the university are devoted to educational outreach, professional training and entrepreneurship.

The UA has taken the lead in moving forward with the Arizona Board of Regents Tribal Consultation Policy (ABOR Policy 1-118, last revised in December 2008). Beginning in early 2009, the UA convened regular meetings with Arizona State University and Northern Arizona University, which resulted in each university planning its own policy in consultation with tribes to guide engagements in research, instruction and outreach.

The James E. Rogers College of Law stands out for initiating several programs in support of Native American students and indigenous populations around the world.

Native American Law Students Association (NALSA) is a volunteer program at the Tucson Indian Center that annually selects 12 NALSA student volunteers to help Indian Center clients find information about federal and tribal benefits and other matters. Law school faculty members attribute much of the program’s success to the students’ commitment to serving the needs of off-reservation Indians.

Indigenous Peoples Law and Policy Program is a faculty-directed law clinic that supervises second- and third-year law students on projects and advocacy work for indigenous communities, including local projects such as assisting Tohono O’odham Nation courts with providing help with human rights cases at the international level. Tenured and tenure-track law faculty supervise, mentor and assign work to students enrolled in the program.

ArizonaNativeNet is a university outreach and distance-learning telecommunications center devoted to the higher education needs of Native Nations in Arizona and the world. Distance-learning programs offered through ArizonaNativeNet include those of the Indigenous Peoples Law and Policy Program, the Native Nations Institute and the Native Peoples Technical Assistance Office. The website is visited thousands of times each month by people around the world and is enhanced by its “freeware” commitment and a strong technical staff.

Engagement Focused on Arizona

The UA partners with a number of state agencies and receives support from the state to sustain engagement activities in such areas as health care, economic development, intercollegiate athletics and the performing arts.

Arizona Health Sciences Center

The Arizona Health Sciences Center is a large complex of institutions that serve the education, research and public engagement missions of the university. They include the colleges of medicine, nursing, pharmacy and public health, as well as University Medical Center, the university’s main teaching hospital and the new Diamond Children’s Medical Center, a pediatric inpatient facility that opened in early 2010.

The Arizona Health Sciences Center also is home to several high-profile centers known for their research, educational outreach and—directly or indirectly—patient care.

Arizona Telemedicine

The Arizona Telemedicine Program was created in partnership with the state Legislature in 1996 to provide health care through telecommunica-
tions to isolated rural communities, tribal nations, and prisons throughout Arizona, the sixth-largest state in the U.S. in square miles. The program is directly funded by the state and has been recognized for its success in integrating teaching, research, engagement and service. It addresses critical state needs for improved diagnosis and management of diabetes, cancer and other diseases. The program leverages state support to obtain external grants that fund much of its budget.

Arizona Telemedicine has succeeded in creating partnerships among a wide variety of not-for-profit and for-profit health care organizations. Functioning as a “virtual corporation,” Arizona Telemedicine is creating new paradigms for health care delivery over the information superhighway. It is recognized as one of the premier programs at the University of Arizona College of Medicine and has received numerous awards at the national level for its research and innovations.

Currently the Arizona Telemedicine Program is providing medical services by real-time and store-and-forward technologies in 20 communities. This year, 500 hours of continuing medical education and continuing education will be delivered to 34 communities using bi-direction video conferencing.

Perhaps the greatest accomplishment of the Arizona Telemedicine Program has been the creation of strong ties between the UA College of Medicine, various health care providers, and the state Legislature. The program also serves as a platform upon which the state’s only public College of Medicine can demonstrate its value to broad constituencies throughout Arizona and the nation.

**Southwest Institute for Research on Women**

The university’s life-enhancing engagement with the community is demonstrated by the Southwest Institute for Research on Women’s Mujer Sana/Healthy Woman project, a collaboration between the UA, the Pima County Health Department, and three community-based women’s residential substance-abuse treatment programs. Funded with $2.5 million from the federal Substance Abuse and Mental Health Services Administration, Mujer Sana connected women in addiction recovery programs with the Institute’s Health Education Curriculum on HIV and other sexually transmitted diseases (STDs), hepatitis B and C, tuberculosis, reproductive anatomy, birth control and relationship skills development. The program also provides free immunizations, voluntary testing for HIV and STDs, and referrals to medical treatment if infected.

Over its five-year project period, Mujer Sana provided curriculum for 851 women and tested 624 women for HIV, 500 for major STIs, and 446 for Hepatitis C, along with hundreds of other disease tests and immunizations. At six months after project entry, outcomes indicated significant increases in health knowledge, mental health status, quality of life, self-sufficiency and physical health, as well as decreases in risky sexual and drug-use behaviors. Importantly, Mujer Sana employed health educators from each of the participating community-based agencies, allowing for sustainability of the health curriculum when federal funding ended.

**Medical Instruction in Phoenix**

In 2007, 40 years after the University of Arizona admitted its first class of 32 medical students, the UA College of Medicine opened a second campus in Phoenix with 24 students. Designed to meet the growing physician workforce needs of the state and nation, the College of Medicine – Phoenix is located on the Phoenix Biomedical Campus (PBC), which also is home to the UA-affiliated Translational Genomics Research Institute and the Arizona Biomedical Collaborative, a joint research venture of the UA, Arizona State University and Northern Arizona University. The College of Medicine – Phoenix is capitalizing on the collaborative spirit fostered among universities, clinical faculty, hospitals, business leaders, and government in the fifth largest city in the country.
About 600 community physicians contribute to the clinical training of students and residents in Phoenix hospitals and other area sites. A large measure of success will be the ability to graduate doctors who are accomplished leaders in society and who stay grounded and balanced in their personal lives. The collegial, nurturing, and respectful educational environment of the medical school will help empower this outcome. In order to improve health care for all, the college teaches and models cultural diversity, champions altruism, and engenders integrity and compassion. The patients of graduates will be the ultimate judge of success in teaching these critical goals. The Colleges of Pharmacy and Public Health are also offering instructional programs and are planning some expansion of their programs offered at the PBC. The College of Nursing is in the program planning phase for the PBC.

Economic Development

The university’s land-grant mission requires that it contribute to the state’s economy and quality of life. Economic development activities are overseen primarily by the Vice President for Research and involve the Office of Corporate and Business Relations, the Office of Technology Transfer, the University Science and Technology Park, the University Bioscience Research Park, now under construction, and the Arizona Center for Innovation. In Fall 2009, the UA Office of Economic Development was eliminated due to restructuring. All its functions have been moved to other offices.

The Office of Technology Transfer manages economic development efforts grounded in the research discoveries of faculty and academic professionals and the creation of intellectual property in the form of patents, trademarks, and copyrights. Its web portal links constituents to economic development entities on and off campus. The university reported in February 2009 that five or more businesses or spin-offs were created through the Office of Technology Transfer in each of the previous seven years. Many of those came from the College of Optical Sciences, which supports partnerships with 40 different corporations through its Industrial Affiliates program.

The University of Arizona supports two research parks. The Science and Technology Park was established in 1994 on 1,345 acres southeast of Tucson and, by 2009, housed 41 technology companies and business organizations, including five Fortune 500 companies: IBM, Raytheon, General Dynamics, Canon USA and Citigroup. The Arizona Center for Innovation, a technology business incubator, and a branch campus of UA South also are located at the park. Its 2007 economic impact report showed the park has contributed $2.5 billion to the Pima County economy and has provided jobs to about 7,000 employees whose earnings average $71,000.

A second research park, the Bioscience Research Park, is under construction about three miles south of the UA main campus. Ground was broken in December 2009 on the new 54-acre campus, which will house research laboratories, a technical high school, and a hotel and conference center. The initial stage of the project is funded by a $4.7 million grant through the American Recovery and Reinvestment Act, the federal economic stimulus fund.

Performing Arts

Public performances in music, dance, and theater at the UA are vital to the cultural life of Tucson and the region. They draw thousands of visitors to campus each year, offer distinctive educational outreach to schoolchildren in the city and outlying districts, and facilitate collaborations between professional artists and students at the university. These activities are centered in the College of Fine Arts and the Schools of Music, Dance, and Theatre Arts, Film and Television, and are enriched by UA presents, which provides world-class performances at Centennial Hall (the
The UA's internationally acclaimed School of Dance holds performances at the Stevie Eller Dance Theatre, an architecturally innovative building that opened in October 2003. UA Dance, the student company for the School of Dance, has a regular program of events throughout the year, attracting about 9,000 patrons annually, according to the College of Fine Arts 2007 annual report. Since opening, the Dance Theatre has become the venue-of-choice for local dance companies. The School of Dance also partners with local public schools, sponsoring guest artist workshops on and off campus and collaborating with Opening Minds through the Arts, a non-profit organization that helps sponsor arts programs in the public schools. In 2007, the school reported partnerships with 20 different philanthropic organizations.

The School of Music offers free public recitals by students and faculty and performances by the University of Arizona Philharmonic Orchestra and smaller ensembles of musicians and chamber groups. Music students and faculty work regularly with city arts organizations, including the Tucson Symphony Orchestra, Arizona Opera, and Tucson Jazz Society. The music school works with Opening Minds through the Arts to provide music education to public school students.

The School of Theatre Arts recently merged with the School of Media Arts to form the School of Theatre, Film and Television. The school supports a variety of programs, including the Hanson Institute, that contribute to the performing arts on campus and facilitates student and faculty collaboration with public arts organizations. The school has two performance spaces, including the Marroney Theatre, which houses the annual season of the Arizona Repertory Theatre, the student production company and the Tornabene Theatre, where other productions are staged. According to its 2007 annual report, the School of Theatre Arts draws 29,000 annually to its performances. Events include the Young Audiences series; the Studio Series for staged readings; New Faces for public performances by freshman and sophomore undergraduates; and the Showcase of Talent, which manages auditions for theatre arts students.

In 2009, UApresents produced 35 shows at Centennial Hall, one of the largest performing arts halls in Tucson, with 2,400 seats. UApresents features world-class arts and touring companies in music, theater and dance, all of which consistently draw large crowds to campus. Touring artists offer master classes, workshops, and lectures to performing arts students and perform to an average of 12,000 school children each year through the School Matinee series. UApresents has confronted serious budget problems over the last decade, but in the last two years ticket sales and a fundraising campaign stabilized the organization’s finances. In February 2009, however, institutional reorganization and budget cuts resulted in a 75 percent cut in funding and the loss of eight full-time employees. The university’s decision to hold classes with enrollments of up to 1,200 students in Centennial Hall also has presented challenges for UApresents, imposing limits on the kind of productions that can be held on weekdays, forcing a reduction of the student matinee series, and limiting access by community organizations.

UA performing arts contribute to public engagement in rich and diverse ways, and their attendance records show a deep and genuine commitment to meeting the expectations of their audiences. Each of these organizations has an active and effective community advisory board, integrates public performance with teaching on campus and educational outreach off-campus, and creates opportunities for creative expression for UA faculty and students.

Intercollegiate Athletics

Intercollegiate Athletics events are the most visible public engagement activity on campus, with an impact reflected in local and national media coverage, game attendance and sports-wear merchandising. The UA is an NCAA Division
I school and member of the Pac-10 Conference. The venues for intercollegiate athletics are prominent landmarks on campus, and the marketing of UA athletic equipment and sportswear is a powerful medium for promoting the university and its brand. Since 2004, UA athletic programs have provided 100 percent of their own operating budgets from ticket sales, television revenues, concessions, donations, and receipts from postseason bowls and tournaments. Funds generated by the athletics programs have allowed the university to redirect funds previously designated for Intercollegiate Athletics for use in important campus-wide projects such as the Student Union and other construction projects.

Intercollegiate Athletics supports a variety of public engagement activities beyond sporting events, including speakers’ bureaus for coaches and athletes, fundraisers such as the Red-Blue Wheelchair Basketball Exhibition, the Run ‘n’ Roll foot race, and Alumni Homecoming events. In 2008-2009, the athletics program had partnerships with 250 non-profit and charity organizations in Tucson and around the state. Intercollegiate Athletics also sponsors Club Arizona—Connecting Kids to College, a program that introduces kindergarten through 12th-grade students to the campus and nurtures their ambitions for education past high school.

Student-Centered Engagement

The UA promotes student-centered engagement through a variety of programs that start at the primary and secondary school levels and continue through students’ undergraduate and postgraduate education.

The Office of Multicultural Affairs and Student Success serves a large number of underrepresented and underserved populations (see Criterion Three). The office prepares K-12 students and their families in greater Tucson and southeastern Arizona for the cultural, academic, and financial challenges of college. The Office of Early Academic Outreach provides a series of summer and school-year programs designed to encourage young people to continue their educations and to help parents provide the emotional and academic support they need to succeed. The College Academy for Parents works with elementary school families; the College Knowledge for Counselors runs professional development workshops for middle school advisors; the College Knowledge for Parents supports eighth grade parents; and Gaining Early Awareness and Readiness for Undergraduate Programs (Gear Up), funded by the U.S. Department of Education, coordinates partnerships among school districts, local business and the University. Gear Up reaches about 3,500 students and their families each year, so the scale of engagement through the Office of Early Academic Outreach is significant.

The Office of Multicultural Affairs and Student Success also sponsors college prep instructional programs in Math, Science and Engineering (Algebra Academy; MESA) as well as workshops on the PSAT/SAT exams. MESA alone has benefited, on average, nearly 900 students each year since 1999.

In addition, the Office of Student Affairs coordinates a variety of campus organizations and offices that support students after they come to the university, activities that encourage community engagement for students and facilitate public service-oriented extracurricular activities. These include ROTC, AFROTC and NROTC; Arizona Student Union Youth Camps; Career Services;
Chapter 6: Criterion Five

Campus Health: Strategic Alternative Learning Strategies, or SALT; the University Testing Office; and Residence Life.

Student Affairs and many UA colleges promote engagement activities for students. One example is Project SOAR, a program of the College of Education that involves more than 100 UA students each year who mentor students in middle schools. The College of Humanities runs a program through the UA Poetry Center to prepare graduate students to become Teaching Artists in K-5 schools, many of which are underserved schools. Because of its success, the program is now expanding to involve undergraduate students.

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Engagement with students is not limited to their time at the UA. The university maintains two vibrant organizations to partner with students and their families both during their time on campus and once they have graduated.

The University of Arizona Alumni Association has a broad portfolio with which it engages former students with current campus activities. The association maintains connections with thousands of alumni across the globe to promote life-long learning and meet the needs of students throughout their lives. The association views graduates as an asset for the university and engages broadly with alumni to recruit students, provide scholarships, advocate for support of higher education, and connect with other alumni and students for networking, mentoring and career advancement. The Alumni Association also publishes a quarterly magazine, Alumnus, and in partnership with the UA, is developing a new website devoted to engagement.

The UA Parents and Family Association is also an important player in engagement. The association staffs a number of UA committees including fundraising, public affairs, and student recruitment and retention. In addition, the association administers a grants program that is an important source of funding for UA campus activities.

Global Engagement

The UA has tremendous and longstanding capacity in the international arena, including collabora-

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The stream teaches
the moon how to reflect.
The moon showed
the orca how to shine in the night sky.
The orca told
the stream how to swim gracefully.

Ciara B., 3rd grade
from the Poetry Center’s Teaching Artists project
tive research projects, student exchange and study abroad programs, institutional affiliations, and economic development partnerships. The foundation for all of these activities is in the international research, creative activity and instruction conducted in every college and almost every department. The ambition to expand and develop these programs comes from the UA’s obligation to prepare students for the opportunities and challenges that globalization in all its dimensions presents (see also Criterion Four). International engagement through research, instruction and outreach also holds enormous potential for crossing disciplinary boundaries and building academic culture and community across colleges and departments. Studies of languages, history, and culture are critical for scholars, no matter what the research field, who work in other countries. Recruitment and retention of international students, and their participation and leadership in numerous cultural events, enrich campus life.

In recognition of the need to expand these activities to bridge to the future, the UA recently created the new office of Vice Provost for Outreach and Global Initiatives/Dean of the Outreach College, which supports a portal to UA global engagement. The new portal is designed to more effectively integrate and publicize UA global engagement efforts.

Many administrative offices on campus support international engagement. Some examples are:

- International Affairs Office
- The Center for English as a Second Language
- Office of Study Abroad and Student Exchange
- Career Services
- Center for Educational Resources in Culture, Language and Literacy
- International Internship Opportunities in Eller College, the Center for Latin American Studies, the College of Public Health, and Gender and Women’s Studies
- The University of Arizona Alumni Association
- Office of International Faculty and Scholars
- The Center for Middle Eastern Studies, funded by the U.S. Department of Education Title VI, and the Center for Latin American Studies

The UA also maintains significant off-campus affiliations:

- The Consortium for North American Higher Education Collaboration
- International Arid Lands Consortium
- International Partner Institutions
- Study Abroad Partners
- Global Advantage Office of Economic Development
- Office of Western Hemispheric Programs
- Puentes Consortium
Chapter 6: Criterion Five

The UA values engagement with Mexico, in part because of its geographic proximity. One recent example of this engagement is the Puentes Consortium, founded in 2009, which links the UA to Rice University in Houston and three private universities in Mexico to carry out multidisciplinary research and create bi-national dialogue around important topics related to the U.S.-Mexico border. The topics include environmental issues, public safety, culture, drugs and arms trafficking, and immigration policy.

The UA also has an office in Mexico City in order to better serve constituents there and provide support to the many UA faculty members, students and staff who conduct work and partner in Mexico and Latin America. The Government of Mexico admitted the Executive Dean of the Colleges of Letters, Arts and Science and Dean of the College of Science into its National System of Researchers in recognition of his important contributions. This is an elite group of researchers whose ranks were only opened to non-resident Mexican researchers in this round of appointments. This recognition comes from the outstanding research the dean has done as a geoscientist and from his effective efforts to enhance Mexico’s scientific and technological capacity through collaborations with the UA and research institutions in Mexico.

Core Component 5c: Summary

A wide range of new and long-term initiatives have succeeded over the last decade in demonstrating the university’s efforts to meet constituent needs and expectations. In the absence of well-defined procedures and standards for assessing the impact of engagement and service, the university has measured its response to constituencies by the scale and breadth of engagement activities on campus. There also is ample evidence that new programs have been created over the last decade as the needs of those constituencies have changed. This suggests that responsiveness to potential international partners is robust, but could be more so with improved coordination, reporting metrics and supervision by central administration.

Core Component 5d:

Internal and external constituencies value the services the organization provides.

External constituencies greatly value the university’s work, as evidenced by the many sustained partnerships discussed above. More detailed assessment of these partnerships is difficult to find. Yet, major long-term community engagements via active, reciprocal and mutually beneficial partnerships and collaborations have been maintained in colleges such as Agriculture and Life Sciences, Architecture and Landscape Architecture, Education, Public Health, Education and Science and through Cooperative Extension, UA Libraries, Arizona Telemedicine, Intercollegiate Athletics and performing arts. New engagement efforts have been launched over the last decade, especially in public health, bioscience, consumer science, environmental science, and educational outreach with K-12 and community colleges. University museums, sporting events, and performing arts programs all have strong support from the community as reflected in statistics on attendance and annual giving. And interviews with external constituents, without exception, confirm that the university’s efforts at public engagement are highly valued.

Drawing upon the nationally recognized framework discussed above for analyzing how services are provided, the UA has yet to achieve its actual capacity and the proper recognition for its strong and extensive work in engagement. The issue is seen as one of recognition rather than a shortcoming.

As the UA’s land-grant mission states, faculty, students and staff of the university are mandated to contribute to the State of Arizona and beyond. The UA recently created a significant university honor given to only one or two faculty members a year—the honor of the Distinguished Outreach Faculty Member. Despite this very public affirmation of the value of outreach and engagement, parts of the university community still feel that outreach is not as significantly recognized or rewarded in promotion and tenure.
or annual performance reviews as the community wishes. Some universities provide funding opportunities and other resources to facilitate and recognize the development of reciprocally beneficial relationships among faculty, students, and the community. The expansion of this kind of infrastructure and reward structure should be strengthened on the UA campus as a means toward improving the value placed on engagement and would enhance capacity.

The UA Collaborative for Outreach and Extension began in January 2008 as part of UA Transformation, a campus-wide reorganization and restructuring process overseen by the Office of the Provost. The result has been a university-wide collaborative group and the development of a web-based portal to outreach and extension engagement activities, programs, and events. The effort involves faculty, program directors and several deans, start-up funding support from the Offices of the Provost and Vice Provost for Outreach and Global Initiatives, a gift from a donor, and TRIF grant support. The successful launch of the collaborative and website portal demonstrates the vitality of grassroots efforts on campus and the exciting potential of new partnerships among internal constituents. Permanent support and leadership is still not solid, yet its early success shows the value to the community. Additional support and infrastructure could immeasurably improve coordination and ultimately recognition. An improved flow of information and coordination of activities would better signify the value placed on engagement and enhance capacity.

One way that the university is expecting to improve information flow with external constituencies is through a new partnership with the Alumni Association. This project will construct a new website to develop connections around five themes: Living Smart, UA Events, Get Involved, Around the World, and Resources. The website is due to go live in late Fall 2010. The website will be featured on the Alumni Association website to help capture the audience of hundreds of thousands of alumni. Mechanisms will be built in to promote two-way communication around content. This project takes one important step toward communicating more effectively with our external constituencies and is firmly rooted in our mission to engage with society’s challenges.

Finally, UA faculty and students engage broadly with the business community and develop partnerships that result in new discoveries (see also Criterion Four).

Core Component 5d: Summary

Internal and external constituents clearly value the services that the UA community provides. Recent activities show a move toward internal recognition of the value of engagement. Lacking are widespread and systematic rewards for the full range of community engagement activities of faculty, staff, and research specialists in annual performance, promotion and tenure, or continuing status.

The university should enhance its reputation for effective community engagement by focusing on two specific areas. First, while there have been positive changes during the UA Transformation process, there should be more well-articulated rewards and recognition for engagement, along with better communication with internal and external constituencies about UA activities that merit rewards. Second, actual assessments of engagement activities are neither publicized nor commonly conducted. That limits the university’s ability to assess how much value external constituents place on UA engagement, but the existence of a large number of long-term partnerships suggests the external communities value their work with the UA.
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BRIDGING TO THE FUTURE: ENGAGEMENT AND SERVICE

As the state’s land-grant university, the University of Arizona has an unwavering commitment to serving the people of Arizona. Since its founding, the UA has engaged in outreach. Bridging to the future means that the UA intensify and expand reciprocal and sustainable partnerships with individuals and organizations throughout Arizona and other constituents. In Fall 2010 as a direct result of the self-study process, the President and Provost charged a task force on the Future and Furthing of Engagement to begin assessing and addressing the issues noted below. In order to bridge to the future with its external constituencies, the UA needs to:

- **Develop ways to capture, assess and communicate existing engagement and achievements:** promote effective use of administrative capacity to facilitate, coordinate, improve and support research, instruction, outreach and public service engagement effort; and effectively communicate the value of these activities to internal and external constituencies.

- **Communicate and foster greater involvement with the local business community and other local sectors:** encourage central administration, colleges and their units, centers and institutes to establish and utilize community input and feedback through active and functional advisory councils or other formal means; and create a President’s Advisory Council for Engagement and Outreach, composed of community members representing significant external constituencies.

- **Create a strong culture of engagement throughout the institution** and communicate its programs to both internal and external constituencies. The university must advance administrative capacity at all administrative levels, and foster effective engagement and service by coordinating and facilitating strategic planning, communication, assessment and budgeting.

- **Reward faculty involvement** by exploring hiring, promotion and tenure, continuing status, and post-tenure review policies and practices in order to more vigorously and consistently foster and reward engagement for faculty members and research professionals; define faculty activities, including engagement and outreach, in a consistent and measurable way. Engagement must flow from the workload of faculty and staff and should not be viewed as an additional mandate.

- **Promote curricular and program innovation** at both the undergraduate and graduate levels to create a student-centered culture of engagement through public outreach and service learning; make engagement and service as central to the student experience as teaching and research.
CHAPTER 6 – CRITERION FIVE: ENDNOTES

1. http://uaforyou.arizona.edu/
4. http://coe.arizona.edu/community
7. http://www.publichealth.arizona.edu/Outreach/
10. http://bio5.arizona.edu/biogate
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17. http://ag.arizona.edu/fcs/
20. http://www.statemuseum.arizona.edu/
22. http://uanews.org/node/31033
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26. http://lessonlink.library.arizona.edu/
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CHAPTER 6 – CRITERION FIVE: ENDNOTES (continued)

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31 http://medicine.arizona.edu/phoenix
32 http://www.ott.arizona.edu/
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34 http://web.cfa.arizona.edu/dance/
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37 http://www.uapresents.org/
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44 http://www.uafamily.arizona.edu/parentfamassoc.php
45 http://www.arizona.edu/global-engagement
46 http://uaforyou.arizona.edu/
47 http://alumni.arizona.edu/
REQUEST FOR CONTINUED ACCREDITATION

Through the self-study process, the University of Arizona better understands and articulates its strengths, the challenges it faces, and opportunities for improvement. This self-study provides a complete and accurate overview that:

- supplies evidence of the UA’s compliance with the Criteria for Accreditation and the associated Core Components;
- establishes the ways that the UA is future-oriented, learning-focused, connected and distinctive; and
- describes opportunities for improvement related to the Criteria for Accreditation.

It is believed that the University of Arizona meets the Commission’s requirements for reaccreditation and reaccreditation in accordance with the Commission’s revised processes is respectfully requested.
Appendix A

Federal Compliance
Federal Compliance

Credits, Program Length, and Tuition

Credits and Program Length

The University of Arizona operates on a semester system—16-week fall and spring semesters and two 8-week summer sessions. The semester length and the assignment of credit hours are established according to practices that are common in higher education, and especially among peer institutions.

Utilizing the academic catalog’s definition that an hour of work is the equivalent of 50 minutes of class time or 60 minutes of independent-study work, university policy requires at least 45 hours of work by each student for each unit of credit. Contact hours required for specific types of courses are as follows:

- At least 15 contact hours of recitation, lecture, discussion, seminar, or colloquium, as well as a minimum of 30 hours of student homework are required for each unit of student credit.
- Workshops require at least 15 through 45 contact hours and the appropriate number of homework hours to comprise a total of at least 45 hours of work for each unit of credit.
- Studios require at least 30 contact hours and at least 15 hours of homework for each unit of credit.
- Laboratory courses must maintain a minimum of 45 contact hours per unit of credit.
- Field trips are to be counted hour-for-hour as laboratory meetings.
- Each unit of internship or practicum must require a minimum of 45 hours of work.¹

Undergraduate degree programs in the Colleges of Agriculture, Social and Behavioral Sciences, Humanities, Science, Management, Public Health, Medicine and Education require 120 hours of work. Three Colleges have established a higher requirement of hour of work: Engineering (128), Fine Arts (125) and Architecture (166). With the exception of Architecture, which expects students to graduate in 5 years, all other degree programs have been designed so that students may graduate in 4 years.

The Academic Requirements of each undergraduate degree program are explicitly stated in the Academic Catalog, under Academic Program Requirements Reports, Undergraduate (APRRs).² These documents detail every degree requirement, including General Education, Foreign Language, Major Course work, Option or Minor requirements if available. A sample³ is available for review.

Proposals for new academic programs are reviewed first by The Vice Provost for Academic Affairs. The Arizona Board of Regents must give final approval to all new academic programs before they may be announced or implemented. Proposals typically are subject to extensive campus review by college and university faculty and administration. Requirements for new programs are available through the Office of Curriculum.⁴

The University of Arizona is an active member of the American Association of Universities (AAU), the American Association of Universities Data Exchange (AAUDE), The Consortium for Student Retention Data Exchange (CSRDE), The American Association of Collegiate Registrars and Admissions Officers (AACRO), The National Academic Advising Association (NACADA), and other regional and national organizations that provide venues for the exchange of information that allows the university to compare standards of academic policies and practices with similar institutions.
Tuition and Fees

Tuition for the public universities of Arizona are set each year and approved by The Arizona Board of Regents. Detailed tables of tuition and required fees are published on the Bursar's Office website. Tuition information is also published at the Arizona Board of Regents website. A historic trend of tuition and fees is published annually in the university's Factbook.

Tuition differentials for some colleges and schools have been in place for several years. The revenue from the differentials helps to support the cost of education in each college or school—faculty, student programs, and other expenses. The differentials reflect variances in the cost of education, the market worth of the degree, and the popularity of the college or school.

RECORD OF STUDENT COMPLAINTS

Formal routes by which students may file complaints are an important part in the mission of the following university agencies.

- Dean of Students Office
- Office of Institutional Equity
- University of Arizona Police Department
- The Ombuds Program

Each of these units has developed its own mechanisms for recording and reporting the allegations they receive. When other units (President, Provost, etc.) receive student complaints, these are typically routed to one of the agencies mentioned above.

The Deans of Students Office is primarily concerned with complaints regarding Conduct and Academic Integrity. The Dean of Students office handles typically about 300 cases of Code of Conduct violations and 1200 cases of Academic Integrity violations every year.

The Office of Institutional Equity "investigates complaints of discrimination on the basis of race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, or gender identity."

The University Police Department handles complaints that are made against the department or its employees. In its 2007 Annual Report, UAPD reported 11 student complaints against its members. Ten of these were resolved; only four were sustained and two more were deemed preventable.

The Ombuds Program provides an option to resolve disputes. It is directly responsible to the president. For FY 2009-10 The Ombuds Program served over 500 individuals. Time spent on cases ranged from thirty minutes to five months. Most Ombuds interventions (about 67%) required one hour or less to reach an acceptable resolution.

About 45% of all contacts come from students. Ombuds contacts initiated by students have exceeded 200 since FY 2004-05. Not all contacts with the Ombuds are complaints. About 66% of all contacts can be catalogued as complaints. The vast majority of student complaints relate to student-faculty interactions, namely, academic or administrative policy issues, grading, advising, and academic dishonesty. Other types of complaints, not associated with faculty necessarily, include harassing or abusive behaviors, interpersonal disputes and ethical concerns.

On July 1, 2007, President Shelton opened the 24-hour/day University of Arizona Ethics and Compliance Hotline. The program provides new, and enhances existing, mechanisms for reporting violations of law or policy on campus. The Hotline assures that employees, guests, students or members of the public, having concerns about perceived ethics and compliance violations, can express their concerns anonymously and have those concerns addressed by the appropriate University officer or unit.
Another route used to report complaints is the UA Facilitator Program. The Facilitators’ main job is to assist in finding answers to questions about the University of Arizona. However, one of its responsibilities is to assist in dispute resolution by providing resources, contact information, policy guidance and follow up. The Facilitators often refer users to one of the main university agencies charged with handling complaints.

TRANSFER OF CREDIT

The determination of acceptability of credit for course work completed at another institution is stated in the university’s online catalog. The evaluation of any course or exam from another institution or organization for acceptance by the University of Arizona will be based only on an official transcript from the institution originally offering the course or exam. Policies used in the evaluation process include:

- Credit is not given for grades lower than a “C”.
- Grades from other institutions are not included in the calculation of the University of Arizona grade-point average.
- Remedial, vocational, technical, highly specialized and personal development courses are not accepted for credit.
- Courses from Arizona public Community Colleges are reviewed individually by the Director of Transfer Curriculum & Articulation and by the appropriate University departments to determine which are acceptable for University credit.

The Office of the Registrar has set in place a Transfer Preapproval process to ensure that transfer courses will apply successfully and timely toward specific requirements in the student’s major, minor, or General Education Program.

The Advising Resource Center provides students access to two statewide tools that facilitate the evaluation and transfer of credit: The Arizona Course Applicability System (AZCAZ) and the Course Equivalency Guide (CEG)

VERIFICATION OF STUDENT IDENTITY

Students in Distance Education

The distance learning program at Outreach College (credit courses under section 910) has mechanisms to verify to us that the individual who takes the course, turns in assigned work and takes the tests and examinations is the student who enrolled in the course. Delivery of distance learning courses is authenticated electronically. Distance learning students must go through the same admission process as any other student. They are issued a student identification number, a PIN and a UA NetID username and password. These credentials are used to allow students in the sites where course materials are delivered.

Tests are proctored. When the testing does not take place at the College’s testing facility, a Proctor Agreement Form has to be completed, signed by the selected proctor and returned to us to complete the registration process. The proctor is sent the exams/assignments for grading and administers the exams to the student. Proctors are required to verify identity before the exam is delivered to the student.

The proctor must be selected from the following list:

a. Personnel or human resources director at place of employment
b. A full-time librarian
c. Administrator at a local school or college
d. School superintendent, principal, counselor, administrator, or faculty member who is not their (the students’) co-worker
e. Faculty member or administrator at an accredited college or university
f. Corporate education director

g. Commissioned officer whose rank is higher than their (the students’) own, or the education officer of the base (for military only)

h. Proctors cannot be related to the student in any way or be a friend of the student.

Students are encouraged to select a proctor they don’t know; many students meet their proctor for the first time when they approach them about proctoring.

Students in Correspondence Education

For Correspondence coursework, the course syllabus reminds students that all course requirements are subject to the Code of Academic Integrity established in the university’s Code of Conduct.

Any student taking an exam for a Correspondence course must show picture identification. Students taking an exam at our Testing Center sign in indicating they are the student that enrolled in the course. Additionally, our Testing Center is equipped with monitoring cameras for further verification.

Students taking an exam outside of our Testing Center must locate a proctor that will oversee them. The proctor information is sent to this office and our testing coordinator will review and send the exam to the proctor. The proctor is instructed to oversee the student at all times and is required to sign the proctor form indicating that they have complied with all requirements. Only the proctor may return the exam to this office. No one related to the student may act as a proctor.

Grades issued by this office are recorded by the UA Registrar and once it is recorded it appears on the student’s transcripts. Non UA students may request official transcripts to be sent to their institution. A Report of Credit addressed to the student is sent using the address given to us by the student at the time of registration.

Originally all course materials were print-based but the college is in the process of shifting to online delivery which will be password protected.

TITLE IV PROGRAM and RELATED RESPONSIBILITIES

General Program Responsibilities

The University of Arizona participates in Title IV programs so as to best advantage every student according to eligibility and need. Sufficient staffing and resources are made available in order to ensure compliance as well as competitive advantage for our students. The university’s fiscal capability is demonstrated through federal audits (Arizona Office of Auditor General) showing no exceptions or findings for over the last ten years. The UA manages and promotes student participation in Pell Grants, SEOG, Perkins Loans, Federal Work Study, as well as both the voluntary U.S.E.D. Quality Assurance and Experimental Sites programs. The University complies with the Higher Education Opportunity Act reauthorization of 2008 (HEOA 2008), Higher Education Reauthorization Act of 1998, Ensuring Continued Access to Student Loans Act of 2008 (ECASLA), Higher Education Reconciliation Act (HERA) of 2006, and College Opportunity and Affordability Act (CCRAA) of 2007. In addition the Office of Scholarships and Financial Aid assures compliance on all financial aid related Title IV issues for the University. All required financial aid related documents are housed within secure files in OSFA such as:

- Program Participation Agreement (PPA)
- Eligibility and Certification Approval Report (ECAR)
- Fiscal Operations Report and Application to Participate (FISAP)
- Reports and agreements related to Quality Assurance Project
- Annual Reports and Topic Authorization for Experimental sites
Full annual financial aid reports\textsuperscript{20} are submitted to the Arizona Board of Regents where they are publicly available once approved by the Board. Much of the data each year is submitted in Common Data Set format\textsuperscript{21} so as to be comparable to other institutions’ financial aid programs.

The Bursar’s Office website includes easy to access links related to student costs, financial aid availability and other information of interest to students and their families.

Financial Responsibility Requirements

The University of Arizona has had no findings or recommendations during the past ten years on any of the OMB Circular A-133 audits; these are performed by Arizona Office of Auditor General. Although participation in the year round Pell provisions of HEOA were voluntary in FY 2009 because regulations had not been yet written, the University of Arizona was one of very few colleges or Universities to activate this beneficial new component of the Pell Grant Program, resulting in expanded summer enrollment opportunities; earlier graduation; and well over two million dollars additional to our highest need students.

Student Loan Default Rates

The University has previously participated in the Federal Family Education Loan Program, as well as the Perkins Loan. We have been authorized to make loans under Direct Loans for over a year and have successfully done operational tests of the federal COD System that originates Direct Loans. Beginning FY 2010 the university is prepared to fund all federal student loans through Federal Direct Loans and Perkins. The University provides its students individual advising, as well as full disclosure of the benefits, costs, and issues related to the various loan programs. This involvement, along with heavily investing in institutional financial aid programs, including need based grants, institutional on campus work, and scholarships, the University has managed to keep both the level of lending and the default rates well below national averages. The Office of Scholarships and Financial Aid handles counseling, disclosure, FFELP Exit Interviews, and advising regarding the loan programs, and the Bursar’s Office handles Perkins Exit Interviews and servicing of Perkins and institutional loans.

The rates of default at University of Arizona are significantly below national rates: 2005 = 2.1%, 2006 = 2.3%, and 2007 = 3.7%. The FY 2007 national cohort default rate is 6.7 percent, rising 1.5 points, from FY 2006 which was 5.2%.

Campus Crime Information and Related Disclosure of Consumer Information

The University of Arizona believes a community that is well informed about the nature of its crimes is safety conscious. That is why, through The UA Police Department, The University routinely publishes crime statistics.\textsuperscript{22} Not only is it the community’s right to know the information included in this document—it is to the community’s advantage to act on it by developing personal routines that enhance safety and becoming actively involved in the reporting of crimes and suspicious/unusual activities.

The crime statistics included in the reports are based on crimes reported to the University of Arizona Police Department, and are in turn reported to the Uniform Crime Reporting Center of the Federal Bureau of Investigations in Washington, D.C.

The University of Arizona experiences the same types of crime as the City of Tucson but, fortunately, not in the same proportions. The campus crime rate is much lower than in the city of Tucson. Statistics supporting this conclusion can be found in the FBI’s Uniform Crime Reports’ Crime Index (UCR),\textsuperscript{23} which lists cities, their populations and total number of serious felony crimes reported by law-enforcement agencies to the FBI-UCR. The UCR can also be found in the Government section of the University of Arizona Library, or in most libraries.

Campus crime statistics\textsuperscript{24} suggest that the major problems on campus continue to be theft and burglary. These are crimes of opportunity that in many cases can be prevented through simple crime prevention measures, for instance UAPD has assigned Police Liaisons to each residence hall; crime prevention police officers visit units to assess their safety risks and present ways to increase awareness and avoid crime-prone situations. Other crime prevention initiatives include: Emergency Blue Light phones, ASUA SafeRide and Safe Walk, UAlert, and Campus Watch.
Satisfactory Academic Progress and Attendance Policies

The University of Arizona’s definitions and policies on satisfactory academic progress in regards to financial aid are explicitly stated in its Financial Aid website under satisfactory academic progress.25

“Beginning with the 2010-2011 academic year, students are monitored for successful completion of Satisfactory Academic Progress standards after every term. All students must successfully complete 66% of the units for which they were awarded financial aid and meet the minimum cumulative grade point average: 2.0 for undergraduate and 3.0 for graduate students. Professional schools (Law, Medicine) monitor their own students’ academic progress.

“All students must be making progress toward a degree. Accumulation of excess units may result in failing to meet SAP timeframe standards. Students who exceed 125% of their degree credit requirements will receive a warning message that they are approaching their maximum timeframe to receive financial aid.”

A student who is no longer eligible for financial aid may appeal this status, if unusual circumstances interfered with their ability to meet SAP standards. The process to obtain a reinstatement of financial aid eligibility is clearly described in the Financial Aid Website.

More broadly, the University of Arizona’s definitions and policies on satisfactory academic progress are explicitly stated in its Academic Catalog, under Academic Standing, Progress, Probation, and Disqualification.26 “Undergraduate students will be considered to be making normal progress toward a degree if their cumulative grade-point-average (GPA) for all work attempted at the University of Arizona is not less than 2.00.”

The University of Arizona’s policies on attendance are explicitly stated in its Academic catalog, under Attendance and Administrative Drop.27 “The University believes that students themselves are primarily responsible for attendance. Instructors will provide students with written statements of their policies with respect to absences. Excessive or extended absence from class is sufficient reason for the instructor to recommend that the student be administratively dropped from the course. For those courses in which enrollment is limited, missing the first class session may be interpreted as excessive absence.”

Contractual Relationships

The University of Arizona does not contract any providers to deliver 25% or more of university content in any of its degree programs.

INSTITUTIONAL DISCLOSURES and ADVERTISING AND RECRUITMENT MATERIALS

The University of Arizona proclaims its full accreditation by The Higher Learning Commission of The North Central Association of Colleges and Schools. The university’s website displays this accreditation.

RELATIONSHIP WITH OTHER ACCREDITING AGENCIES and WITH STATE REGULATORY BODIES

Many of the University’s Colleges, Schools and Academic Programs are accredited through the professional organizations in their disciplines. An example of this type of relationships is the College of Engineering and ABET Inc. However, The Institution as a whole only seeks full accreditation through NCA.

PUBLIC NOTIFICATION OF COMPREHENSIVE EVALUATION VISIT and THIRD PARTY COMMENT

The Steering and Executive Committees have sought feedback from university and community members throughout the entire self-study process. Particular attention was paid to members of the minority and other special interest advisory councils with which the president consults on a regular basis.

A comprehensive communication plan that includes internet, mass media and public campaigns is in place to announce the visit and prepare the community for it. A detailed description of the program is available separately.
Making the Case for Accreditation

Through the self-study process, the University of Arizona better understands and articulates its strengths, the challenges it faces, and opportunities for improvement. This self-study provides a complete and accurate overview that:

- supplies evidence of the UA’s compliance with the Criteria for Accreditation and the associated Core Components;
- establishes the ways that the UA is future-oriented, learning-focused, connected and distinctive; and
- describes opportunities for improvement related to the Criteria for Accreditation.

It is believed that the UA meets the Commission’s requirements for reaccreditation and reaccreditation for a 10-year period is respectfully requested.
APPENDIX A – Federal Compliance: ENDNOTES

4. http://oirps.arizona.edu/curriculum/
7. http://factbook.arizona.edu/2009-10/students/costs
8. http://deanofstudents.arizona.edu/
10. http://www.uapd.arizona.edu/
11. http://ombuds.web.arizona.edu/
17. http://advising.arizona.edu/students_online_tools
22. http://www.uapd.arizona.edu/campus_crime_stats01_04.htm
Appendix B

The University of Arizona
Organizational Chart
Appendix C

Organization of Academic Units
The University of Arizona
Academic Units 2010

College of Agriculture and Life Sciences
Agriculture and Biosystems Engineering
Agricultural Education
Agricultural and Resource Economics
Animal Sciences
Entomology
School of Natural Resources and the Environment
Office of Arid Lands Studies
Norton School of Family and Consumer Sciences
Nutritional Sciences
School of Plant Sciences
Soil, Water and Environmental Sciences
Veterinary Science and Microbiology

College of Architecture and Landscape Architecture
School of Architecture
School of Landscape Architecture and Planning

College of Education
Disability and Psychoeducational Studies
Educational Policy Studies and Practices
Educational Psychology
Teaching, Learning and Sociocultural Studies

College of Engineering
Aerospace and Mechanical Engineering
Biomedical Engineering
Electrical and Computer Engineering
School of Sustainable Engineered Systems
Chemical and Environmental Engineering
Civil Engineering and Engineering Mechanics
Materials Science and Engineering
Mining and Geological Engineering
Systems and Industrial Engineering

Graduate College/Graduate Interdisciplinary Programs (GIDP)
American Indian Studies
Applied Biosciences
Applied Mathematics
Arid Lands Resource Sciences
Biomedical Engineering
Cancer Biology
Cognitive Science
Entomology and Insect Science
Genetics
Appendix C

Organization of
Academic Units

Global Change
Neuroscience
Physiological Sciences
Remote Sensing and Spatial Analysis
Second Language Acquisition and Teaching
Statistics

Honors College

James E. Rogers College of Law

Eller College of Management
  Accounting
  Economics
  Eller Graduate School of Management
  Finance
  Management Information Systems
  Management and Organizations
  Marketing
  McGuire Center for Entrepreneurship

College of Medicine – Tucson
  Anesthesiology
  Cell Biology and Anatomy
  Emergency Medicine
  Family and Community Medicine
  Immunobiology
  Medical Pharmacology
  Medicine
  Neurology
  Obstetrics and Gynecology
  Ophthalmology and Vision Sciences
  Orthopaedic Surgery
  Pathology
  Pediatrics
  Pharmacology
  Physiology
  Psychiatry
  Radiation Oncology
  Radiology
  Surgery

College of Medicine – Phoenix
  Basic Medical Sciences
  Clinical departments pending ABOR approval, December 2010

College of Nursing

College of Optical Sciences
Outreach College

College of Pharmacy
Pharmaceutical Sciences
Pharmacology and Toxicology
Pharmacy Practice and Science

Mel and Enid Zuckerman College of Public Health

The University of Arizona South

COLLEGES OF LETTERS, ARTS AND SCIENCE

College of Fine Arts
School of Art
School of Dance
School of Music
School of Theatre, Film and Television

College of Humanities
English
School of International Languages, Literature and Cultures
   Africana Studies
   Classics
   Critical Languages
   East Asian Studies
   French and Italian
   German Studies
   Religious Studies
   Russian and Slavic Studies
   Spanish and Portuguese

College of Science
Astronomy
Chemistry and Biochemistry
School of Earth and Environmental Science
   Atmospheric Sciences
   Geosciences
   Hydrology and Water Resources
   Laboratory of Tree-Ring Research
   Accelerator Mass Spectrometry Laboratory
   Soil, Water and Environmental Science*
Ecology and Evolutionary Biology
School of Information Science, Technology and Arts (affiliated programs)
   BIO5
   Biosphere 2
   Cognitive Science
   Computer Science
Management and Information Sciences*
Electrical and Computer Engineering*
Systems and Industrial Engineering*
College of Optical Sciences*
Ecology and Evolutionary Biology
School of Information Resources and Library Science*
Linguistics*
Sociology*
Statistics GIDP*
School of Mathematical Sciences
  Mathematics
  Applied Mathematics GIDP
  Statistics GIDP
School of Mind, Brain and Behavior
  Cognitive Science GIDP
  Neuroscience GIDP
  Neuroscience
  Psychology
  Speech, Language and Hearing Science
Molecular and Cellular Biology
Physics
Planetary Sciences

**College of Social and Behavioral Sciences**

School of Anthropology
  Bureau of Applied Research in Anthropology
  Arizona State Museum
  Classics (partial)
Communication
Gender and Women's Studies
School of Geography and Development
  Center for Applied Spatial Analysis
School of Government and Public Policy
History
School of Information Resources and Library Science
School of Journalism
Arizona Center for Judaic Studies
Center for Latin American Studies
Linguistics
Mexican American and Raza Studies
Near Eastern Studies
Philosophy
Sociology

*Participating units from other colleges*
Appendix D

University’s
Strategic Plan
Progress Report
Appendix D
University’s Strategic Plan
Progress Report

This Progress Report assesses efforts to achieve the goals set out in the University’s Strategic Plan.

To help guide decision making in the dynamic financial environment facing the University, we have chosen benchmarks to assess progress on four strategic priorities against our peers and our own goals. We also take into account ABOR’s system redesign targets and 2020 Plan. These ambitious targets will require more resources than currently provided by the state, so strategic planning is both essential and difficult.

1. Expanding Access and Enhancing Educational Excellence

Benchmark 1: Student Enrollment
Enrollments have increased by 2% annually. To meet the ambitious goals of the ABOR 2020 plan, substantial increases must come from off-campus enrollments. Though these programs have lower costs per student, projected increases require state investments that are not currently envisioned.

Benchmark 2: Annual Undergraduate Tuition and Fees
Even with an increase of 24% this year, student costs remain well below our peers. Given constraints on state funding, substantial increases in tuition will be required in the coming years to meet our goals.

Benchmark 3: Student Indebtedness
Compared to national norms, our students have limited state support, but their indebtedness matches, or is slightly lower than our peers. As tuition increases, we must make certain that adequate financial aid is available. Such aid is essential if we are to meet our goals of increasing access and diversity.

Benchmark 4: The Arizona Assurance Program
This scholarship program exemplifies the University’s commitment to excellence and diversity. It is designed to assure that the University will be accessible to Arizona’s lowest income families. To build on the achievements of this signature UA program, an 8% increase in annual funding is planned.
Benchmark 5: Student Diversity
The A2 Assurance Program is central to our continuing efforts to expand the diversity of our student population to provide opportunities to the diverse population of our state and region. These efforts continue to yield significant advances.

<table>
<thead>
<tr>
<th>Benchmark 5</th>
<th>UA</th>
<th>Peers' Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Diversity (2009)</td>
<td>% Minority</td>
<td>29%</td>
<td>22%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Benchmark 6: Degrees Awarded
Professional and doctorate degrees declined slightly in the past year, while bachelor’s and master’s degrees increased slightly. To meet our ambitious targets, we must continue to improve retention, increase recruitment of better-prepared students, and expand our transfer pipeline.

<table>
<thead>
<tr>
<th>Benchmark 6</th>
<th>UA</th>
<th>Peers' Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Degrees Awarded (2008)</td>
<td>Bachelors</td>
<td>5,612</td>
<td>7,089</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Masters &amp; Specialist</td>
<td>1,418</td>
<td>2,059</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>First Prof.</td>
<td>326</td>
<td>513</td>
<td>-8%</td>
<td>-7%</td>
</tr>
<tr>
<td></td>
<td>Doctoral</td>
<td>451</td>
<td>655</td>
<td>-2%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>7,807</td>
<td>10,805</td>
<td>0%</td>
<td>2%</td>
<td>9,820</td>
</tr>
</tbody>
</table>

2. Increasing Achievements in Research, Scholarship and Creative Expression

Benchmark 1: Faculty Diversity (T/TE)
Little progress has been made in hiring and retaining outstanding faculty from underrepresented backgrounds. We must do better to compete for top candidates and retain outstanding performers.

<table>
<thead>
<tr>
<th>Benchmark 1</th>
<th>UA</th>
<th>Peers' Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Diversity (T/TE) (2009)</td>
<td>% Female</td>
<td>31%</td>
<td>30%</td>
<td>0%</td>
<td>-1%</td>
</tr>
<tr>
<td></td>
<td>% Minority</td>
<td>17%</td>
<td>17%</td>
<td>6%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Benchmark 2: Faculty Salary Market Comparisons
Although salaries rose slightly in the past year, we continue to lose ground to our peers. As a result, we lose some our best faculty, and are less competitive in hiring top candidates. Given limited state resources, we must seek to increase salaries with internal funding.

<table>
<thead>
<tr>
<th>Benchmark 2</th>
<th>UA</th>
<th>Peers' Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>UA Faculty Salary Comparisons (2009)</td>
<td>Full</td>
<td>$114,485</td>
<td>$126,896</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>Associate</td>
<td>$79,512</td>
<td>$85,560</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>Assistant</td>
<td>$66,642</td>
<td>$74,486</td>
<td>-1%</td>
<td>4%</td>
</tr>
</tbody>
</table>
Benchmark 3: Graduate and First Professional Enrollments
Enrollments increased by 2% in the past year, but this rate of growth will not achieve our stated goal of enrolling 10,000 graduate and first professional students by 2020. A major impediment is the lack of resources available to fund graduate students and program development.

<table>
<thead>
<tr>
<th>Benchmark 3</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>Peers’ 1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grad. &amp; First Prof. Enrollment (2009)</td>
<td>8,338</td>
<td>10,672</td>
<td>2%</td>
<td>9,220</td>
<td>10,000</td>
</tr>
</tbody>
</table>

Benchmark 4: Total Research and Development Expenditures
We registered a modest gain in this area, though we are still behind our peers. The loss of key faculty remains a major threat for long-term growth in research funding.

<table>
<thead>
<tr>
<th>Benchmark 4</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total R&amp;D Expenditures in $1,000s (2008)</td>
<td>$545,869</td>
<td>$584,170</td>
<td>3%</td>
<td>-1%</td>
<td>$773,000</td>
</tr>
</tbody>
</table>

Benchmark 5: Faculty Awards and National Academy Members
Complete records of faculty awards are not currently compiled. We appear to lag a bit behind our peers, though there is little we can do in the short run to change this trend given faculty salary issues.

<table>
<thead>
<tr>
<th>Benchmark 5</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Awards (2007)</td>
<td>22</td>
<td>23</td>
<td>22%</td>
<td>-4%</td>
<td>27</td>
</tr>
<tr>
<td>National Academy Members (2007)</td>
<td>30</td>
<td>32</td>
<td>-3%</td>
<td>-6%</td>
<td>36</td>
</tr>
</tbody>
</table>

Benchmark 6: Number of Postdoctoral Fellows
We improved on this benchmark, which is closely related to fields that generate external research funding. As with such funding, our progress in this area depends on retaining highly productive researchers, who attract and support excellent postdocs.

<table>
<thead>
<tr>
<th>Benchmark 6</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Doctorates (2006)</td>
<td>384</td>
<td>416</td>
<td>12%</td>
<td>0%</td>
<td>470</td>
</tr>
</tbody>
</table>

3. Expanding Community Engagement and Workforce Impact

Benchmark 1: Number of Invention Disclosures
In 2007 disclosures increased 16%, from 90 to 104. This year, the number of disclosures of inventions rose another 26% as a result of increased personnel charged with assisting faculty with technology transfers. These increases are on track to achieve the goal of meeting the peer median by FY2012.

<table>
<thead>
<tr>
<th>Benchmark 1</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invention Disclosures (2007)</td>
<td>104</td>
<td>165</td>
<td>16%</td>
<td>165</td>
<td>170</td>
</tr>
</tbody>
</table>
Benchmark 2: Public Service Expenditures
We gained ground in this area over the past year, but remain well behind our peers. As with other benchmarks, investments from the state are essential if we are to expand our services to the state.

<table>
<thead>
<tr>
<th>Benchmark 2</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Service Expenditures in $1,000s (2008)</td>
<td>$71,512</td>
<td>$107,882</td>
<td>10%</td>
<td>5%</td>
<td>$88,000</td>
</tr>
</tbody>
</table>

Benchmark 3: Major Agreements for Licenses and Options
The number of agreements between university researchers and external partners increased by 34%. Licenses and options on technologies increased 13%. These innovations involved varied business and community partners, including seven new start-ups based on technological advances at the University.

<table>
<thead>
<tr>
<th>Benchmark 3</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Agreements for Licenses &amp; Options (2007)</td>
<td>28</td>
<td>43</td>
<td>8%</td>
<td>-14%</td>
<td>58</td>
</tr>
</tbody>
</table>

Benchmark 4: Number of People Served by Cooperative Extension
Cooperative Extension programs reflect the range of services provided by the University to industries, communities, and families. Cooperative Extension helps people apply research to their everyday needs. These programs leverage over one dollar of outside funding for every state dollar invested.

<table>
<thead>
<tr>
<th>Benchmark 4</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>People Served by Cooperative. Ext. (2008)</td>
<td>309,619</td>
<td>n/a</td>
<td>22%</td>
<td>n/a</td>
<td>325,000</td>
</tr>
</tbody>
</table>

Benchmark 5: Endowment Assets
As more recent data become available, market trends will show a decrease in this area for the University, as for our peers. Even more critical, our endowment is less than 34% of that of our peers. To build our endowment, we must build on the reforms implemented over the past two years.

<table>
<thead>
<tr>
<th>Benchmark 5</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endowment Assets, in $1,000s (2007)</td>
<td>$532,351</td>
<td>$1,582,207</td>
<td>14%</td>
<td>18%</td>
<td>$714,534</td>
</tr>
</tbody>
</table>

Benchmark 6: Annual Giving
Fiscal 2008 was a record year for private donations to the University, with almost $154 million raised, representing a 7% increase over fiscal 2007. Gift revenue increased steadily over the last two years, with a 42% increase from 2004 to 2007 and a 27% increase from 2005 to 2008. More resources need to be invested in working from our database of over 640,000 donors.

<table>
<thead>
<tr>
<th>Benchmark 6</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>Year Change</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Giving, in $1,000s (2008)</td>
<td>$153,960</td>
<td>$206,835</td>
<td>7%</td>
<td>13%</td>
<td>$170,000</td>
</tr>
</tbody>
</table>
4. Improving Productivity and Increasing Efficiency

**Benchmark 1: Bachelor Degrees per 100 FTE Students**
Planned increases in our four and six year graduation rates will result in improvements in this measure.

<table>
<thead>
<tr>
<th>Benchmark 1</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelors per 100 FTE Students (2008)</td>
<td>20</td>
<td>24</td>
<td>-1%</td>
<td>2%</td>
<td>21</td>
</tr>
</tbody>
</table>

**Benchmark 2: Cost per Degree**
The Transformation Plan and other reforms are helping us to improve our efficiency and should lower our cost per degree. Reorganizations and realignments of program are one way we are working to improve educational quality and increase research productivity while reducing costs.

<table>
<thead>
<tr>
<th>Benchmark 2</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Educational Cost per Degree (2008)</td>
<td>$63,300</td>
<td>$65,500</td>
<td>6%</td>
<td>2%</td>
<td>$77,900</td>
</tr>
</tbody>
</table>

**Benchmark 3: Undergraduate Graduation Rates**
Four-year graduation rates have improved but still lag behind some of our peers, largely because we educate a broader range of students. To meet our goals, we must continue to devote substantial resources to recruiting highly qualified students and to improving support for all our students.

<table>
<thead>
<tr>
<th>Benchmark 3</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Graduation % Rates (2009)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 YR Cohort Entering</td>
<td>Fall ’04</td>
<td>Fall ’04</td>
<td>6%</td>
<td>7%</td>
<td>Fall ’10</td>
</tr>
<tr>
<td>Graduation Rate</td>
<td>34%</td>
<td>51%</td>
<td></td>
<td></td>
<td>36%</td>
</tr>
<tr>
<td>6 YR Cohort Entering</td>
<td>Fall ’02</td>
<td>Fall ’02</td>
<td>2%</td>
<td>3%</td>
<td>Fall ’08</td>
</tr>
<tr>
<td>Graduation Rate</td>
<td>57%</td>
<td>81%</td>
<td></td>
<td></td>
<td>60%</td>
</tr>
</tbody>
</table>

**Benchmark 4: Freshman Retention Rate**
Our resident student retention rate rose slightly to 81%. Our overall retention rate dipped from 79% to 78% as a result of a drop in the non-resident rate from 78% to 73%. In Arizona as in other states, students are returning to their home states as a result of continuing financial problems.

<table>
<thead>
<tr>
<th>Benchmark 4</th>
<th>UA</th>
<th>Peers’ Median</th>
<th>1 Year Change</th>
<th>2015</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Retention % Rate (2010)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>Cohort Entering</td>
<td>Fall ’08</td>
<td>Fall ’08</td>
<td>Fall ’13</td>
<td>Fall ’18</td>
</tr>
<tr>
<td>Resident</td>
<td>81%</td>
<td>n/a</td>
<td>1%</td>
<td>n/a</td>
<td>84%</td>
</tr>
<tr>
<td>Non-resident</td>
<td>73%</td>
<td>n/a</td>
<td>-5%</td>
<td>n/a</td>
<td>78%</td>
</tr>
<tr>
<td>Total</td>
<td>78%</td>
<td>92% [estimated]</td>
<td>-1%</td>
<td>0%</td>
<td>82%</td>
</tr>
</tbody>
</table>

Note: Arizona Board of Regents (ABOR) peers include: Michigan State Univ, Ohio State Univ, Pennsylvania State Univ, Texas A&M Univ, Univ California-Davis, Univ California-Los Angeles, Univ Florida, Univ Illinois-Urbana Champaign, Univ Iowa, Univ Maryland-College Park, Univ Minnesota-Twin Cities, Univ North Carolina-Chapel Hill, Univ Texas-Austin, Univ Washington, Univ Wisconsin-Madison
### The University of Arizona - Strategic Plan Scorecard

<table>
<thead>
<tr>
<th>Measure (Benchmark Fiscal Year)</th>
<th>UA</th>
<th>Peers' Median</th>
<th>1 Year Change</th>
<th>Targets</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Expanding Access and Enhancing Educational Excellence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Enrollment Head Count (2009)</td>
<td>38,057</td>
<td>43,246</td>
<td>2%</td>
<td>2%</td>
<td>45,100</td>
</tr>
<tr>
<td>Annual UG Tuition &amp; Fees (2010)</td>
<td>$6,815</td>
<td>$8,114</td>
<td>24%</td>
<td>4%</td>
<td>$10,500</td>
</tr>
<tr>
<td>Median Student indebtedness Total (2009)</td>
<td>$18,025</td>
<td>$19,714</td>
<td>-1%</td>
<td>-4%</td>
<td>$22,700</td>
</tr>
<tr>
<td># of AZ Assurance New Freshman (2010)</td>
<td>772</td>
<td>n/a</td>
<td>29%</td>
<td>n/a</td>
<td>830</td>
</tr>
<tr>
<td>Student Diversity (2009)</td>
<td>% Minority</td>
<td>29%</td>
<td>22%</td>
<td>0%</td>
<td>42%</td>
</tr>
<tr>
<td># of Degrees Awarded (2008)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>5,612</td>
<td>7,069</td>
<td>1%</td>
<td>1%</td>
<td>7,100</td>
</tr>
<tr>
<td>Masters &amp; Specialist</td>
<td>1,414</td>
<td>2,059</td>
<td>1%</td>
<td>5%</td>
<td>2,160</td>
</tr>
<tr>
<td>First Prof</td>
<td>326</td>
<td>513</td>
<td>-4%</td>
<td>-7%</td>
<td>520</td>
</tr>
<tr>
<td>Doctoral</td>
<td>451</td>
<td>655</td>
<td>-2%</td>
<td>0%</td>
<td>530</td>
</tr>
<tr>
<td>Total</td>
<td>7,787</td>
<td>10,805</td>
<td>0%</td>
<td>2%</td>
<td>9,820</td>
</tr>
</tbody>
</table>

| **2. Increasing Achievements in Research, Scholarship, and Creative Expression** | | | | | |
| Faculty Diversity (17/18) (2009) | % Female | 31% | 36% | 0% | -1% | 24% | 36% | PEDS |
| % Minority | 17% | 17% | 6% | 7% | 20% | 22% | PEDS |
| UA Faculty Salary Market Comparisons, Weighted Average Salaries (2009) | Full | $114,485 | $126,896 | 2% | 1% | $140,000 | $100,000 | AAUP |
| Associate | $19,512 | $18,560 | 2% | 3% | 97% | 100% | AAUP |
| Assistant | $66,442 | $74,886 | -1% | 4% | 95% | 100% | AAUP |
| Grad & First Prof. Total Enrollment (2009) | 8,338 | 10,772 | -2% | 2% | 9,220 | 10,000 | PEDS |
| Total R&D Expenditures, in $1,000s (2008) | $545,689 | $584,170 | 3% | -1% | $773,000 | $998,000 | NSF |
| Faculty Awards (2007) | 22 | 23 | 22% | -4% | 27 | 30 | Center |
| # of Natl Academy Members (2007) | 30 | 32 | -6% | 0% | 36 | 40 | Center |
| # of Post Docs (2006) | 384 | 416 | 12% | 0% | 470 | 500 | Center |

| **3. Expanding Community Engagement and Workforce Impact** | | | | | |
| # of Invention Disclosures (2007) | 104 | 165 | 16% | 6% | 165 | 170 | UA-VPR |
| Public Service Expenditures, in $1,000s (2008) | $71,512 | $107,882 | 10% | 6% | $588,000 | $102,000 | IPEDS |
| # of Major Agreements for Licenses & Options (2007) | 38 | 40 | 8% | 14% | 58 | 64 | UA-VPR |
| # of People Served by Coop. Ext. (2008) | 1,029,619 | n/a | 22% | n/a | 325,000 | 325,000 | UA-AG |
| Indemnity Assets, in $1,000s (2007) | $532,151 | $1,582,207 | 14% | 18% | $714,534 | $1,048,336 | Center |
| Annual Giving, in $1,000s (2008) | $233,900 | $206,835 | 7% | 13% | $170,000 | $196,000 | Center |

| **4. Improving Productivity and Increasing Efficiency** | | | | | |
| Bach. Degrees per 100 FTE Students (2008) | 20 | 24 | -1% | 2% | 21 | 22 | IPEDS |
| Full Educational Cost per Degree (2008) | $63,300 | $65,500 | 6% | 2% | $77,900 | $90,000 | PEDS |
| Undergraduate Graduation Rates (2009) | 4-Year Cohort Entering | Fall '04 | Fall '04 | 0% | 7% | Fall '10 | Fall '11 |
| Total | 34% | 35% | 2% | 5% | 36% | 38% | IPEDS |
| 6-Year Cohort Entering | Fall '02 | Fall '02 | 2% | 3% | 38% | 40% | IPEDS |
| Total | 57% | 61% | 3% | 5% | 60% | 62% | IPEDS |
| freshmen Retention Rates (2010) | Actual Cohort Entering | Fall '08 | Fall '08 | 1% | 2% | Fall '13 | Fall '14 |
| Resident | 83% | n/a | 1% | n/a | 84% | 86% | IPEDS |
| Non-resident | 73% | n/a | -5% | n/a | 78% | 83% | IPEDS |
| Total | 78% | 92% | -1% | 0% | 82% | 85% | IPEDS |

Note: Arizona Board of Regents (ABOR) peers include: Michigan State Univ, Ohio State Univ, Pennsylvania State Univ, Texas A&M Univ, Univ California-Davis, Univ California-Los Angeles, Univ Florida, Univ Illinois-Urbana Champaign, Univ Iowa, Univ Maryland-College Park, Univ Minnesota-Twin Cities, Univ North Carolina-Chapel Hill, Univ Texas-Austin, Univ Washington, Univ Wisconsin-Madison
Facility Code Index

- <5% (Good)
- 5-10% (Fair)
- >10% (Poor)
- Demolish

Note: Map background shows an illustrative build-out concept of campus development (the Comprehensive Campus Plan - ABOR 2009).

Facility Code Index is the deferred maintenance dollars divided by the total building replacement cost. These percentages are based on the most current available data.
<table>
<thead>
<tr>
<th>Academic Program Name</th>
<th>Degree Type</th>
<th>College</th>
<th>School / Department / Division / Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>BSBA</td>
<td>Management</td>
<td>Accounting, Dept of</td>
</tr>
<tr>
<td>Accounting</td>
<td>MAc</td>
<td>Management</td>
<td>Accounting, Dept of</td>
</tr>
<tr>
<td>Aerospace Engineering</td>
<td>BSAeE</td>
<td>Engineering</td>
<td>Aerospace and Mechanical Engineering, Dept of</td>
</tr>
<tr>
<td>Aerospace Engineering</td>
<td>MS</td>
<td>Engineering</td>
<td>Aerospace and Mechanical Engineering, Dept of</td>
</tr>
<tr>
<td>Aerospace Engineering</td>
<td>PhD</td>
<td>Engineering</td>
<td>Aerospace and Mechanical Engineering, Dept of</td>
</tr>
<tr>
<td>Africana Studies</td>
<td>BA</td>
<td>Humanities</td>
<td>Africana Studies, Comm on</td>
</tr>
<tr>
<td>Agribusiness Economics &amp; Mgmt</td>
<td>BS</td>
<td>Agriculture &amp; Life Sciences</td>
<td>Agricultural and Resource Economics, Dept of</td>
</tr>
<tr>
<td>Agricultural and Biosystems Engineering</td>
<td>MS</td>
<td>Engineering</td>
<td>Agricultural and Biosystems Engineering, Dept of</td>
</tr>
<tr>
<td>Agricultural and Biosystems Engineering</td>
<td>PhD</td>
<td>Engineering</td>
<td>Agricultural and Biosystems Engineering, Dept of</td>
</tr>
<tr>
<td>Agricultural and Resource Economics</td>
<td>MS</td>
<td>Agriculture &amp; Life Sciences</td>
<td>Agricultural and Resource Economics, Dept of</td>
</tr>
<tr>
<td>Agricultural Education</td>
<td>MAE</td>
<td>Agriculture &amp; Life Sciences</td>
<td>Agricultural Education, Dept of</td>
</tr>
<tr>
<td>Agricultural Education</td>
<td>MS</td>
<td>Agriculture &amp; Life Sciences</td>
<td>Agricultural Education, Dept of</td>
</tr>
<tr>
<td>Agricultural Technology Management &amp; Education</td>
<td>BS</td>
<td>Agriculture &amp; Life Sciences</td>
<td>Agricultural Education, Dept of</td>
</tr>
<tr>
<td>American Indian Studies</td>
<td>MA</td>
<td>Graduate College</td>
<td>American Indian Studies, Comm on</td>
</tr>
<tr>
<td>American Indian Studies</td>
<td>PhD</td>
<td>Graduate College</td>
<td>American Indian Studies, Comm on</td>
</tr>
<tr>
<td>Animal Sciences</td>
<td>BS</td>
<td>Agriculture &amp; Life Sciences</td>
<td>Animal Sciences, Dept of</td>
</tr>
<tr>
<td>Animal Sciences</td>
<td>MS</td>
<td>Agriculture &amp; Life Sciences</td>
<td>Animal Sciences, Dept of</td>
</tr>
<tr>
<td>Anthropology</td>
<td>BA</td>
<td>Social &amp; Behavioral Sciences</td>
<td>Anthropology, School of</td>
</tr>
<tr>
<td>Anthropology</td>
<td>MA</td>
<td>Social &amp; Behavioral Sciences</td>
<td>Anthropology, School of</td>
</tr>
<tr>
<td>Anthropology</td>
<td>PhD</td>
<td>Social &amp; Behavioral Sciences</td>
<td>Anthropology, School of</td>
</tr>
<tr>
<td>Anthropology</td>
<td>BS</td>
<td>Social &amp; Behavioral Sciences</td>
<td>Anthropology, School of</td>
</tr>
<tr>
<td>Anthropology and Linguistics</td>
<td>PhD</td>
<td>Social &amp; Behavioral Sciences</td>
<td>Anthropology, School of and Linguistics, Dept of</td>
</tr>
<tr>
<td>Applied and Industrial Physics</td>
<td>PSM</td>
<td>Science</td>
<td>Physics, Dept of</td>
</tr>
<tr>
<td>Applied Biosciences</td>
<td>PSM</td>
<td>Graduate College</td>
<td>Applied Biosciences, Comm on</td>
</tr>
<tr>
<td>Applied Mathematics</td>
<td>MS</td>
<td>Graduate College</td>
<td>Applied Mathematics, Comm on</td>
</tr>
<tr>
<td>Applied Mathematics</td>
<td>PhD</td>
<td>Graduate College</td>
<td>Applied Mathematics, Comm on</td>
</tr>
<tr>
<td>Applied Science</td>
<td>BAS</td>
<td>UA South</td>
<td>Science, Technology and Professional Studies, Division of</td>
</tr>
<tr>
<td>Architecture</td>
<td>BArch</td>
<td>Architecture &amp; Landscape Architecture</td>
<td>Architecture, School of</td>
</tr>
<tr>
<td>Architecture</td>
<td>MArch</td>
<td>Architecture &amp; Landscape Architecture</td>
<td>Architecture, School of</td>
</tr>
<tr>
<td>Architecture</td>
<td>MS</td>
<td>Architecture &amp; Landscape Architecture</td>
<td>Architecture, School of</td>
</tr>
<tr>
<td>Arid Lands Resource Sciences</td>
<td>PhD</td>
<td>Graduate College</td>
<td>Arid Lands Resource Sciences, Comm on</td>
</tr>
<tr>
<td>Art</td>
<td>MFA</td>
<td>Fine Arts</td>
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</tr>
<tr>
<td>Art Education</td>
<td>BFA</td>
<td>Fine Arts</td>
<td>Art, School of</td>
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<tr>
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<td>MA</td>
<td>Fine Arts</td>
<td>Art, School of</td>
</tr>
<tr>
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<td>BA</td>
<td>Fine Arts</td>
<td>Art, School of</td>
</tr>
<tr>
<td>Art History</td>
<td>MA</td>
<td>Fine Arts</td>
<td>Art, School of</td>
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Appendix G

Academic Program Changes
(2000-2010)
### University of Arizona
#### Academic Program Changes (2000 - 2010)

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* "En route" Master's degrees were created in 2008 for PhD programs that do not have a corresponding Master's degree. Students admitted to the PhD program, who complete the requirements for a Master’s degree, but do not complete the requirements for the PhD are awarded the en route Master’s degree.
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