

General Information

OBJECTIVES

Arizona State University provides an opportunity for students from all racial, cultural, and economic backgrounds to pursue a full range of high-quality academic programs. The university actively seeks to have reflected within its student body and among its employees the rich diversity of cultures found within the state, the nation, and the world.

Active research programs contribute to and expand knowledge, thereby serving the instructional needs of students, contributing to the professional advancement of the faculty, and enhancing economic, social, cultural, and technological progress.

The university's teaching, research, and service programs seek to instill in students sensitivity to other races and cultures and a spirit of critical inquiry and challenge them to seek answers to fundamental questions of human concern. The university's support programs contribute to the academic success and personal development of all students.

The university seeks to expand cultural horizons, enhance respect for human diversity, improve moral and ethical standards, and educate for responsible citizenship while preparing its graduates to accept and perform capably in rewarding careers in our pluralistic society.

MISSION

Arizona State University has emerged as a leading national and international research and teaching institution with a primary focus on Maricopa County, Arizona's dominant population center. This rapidly growing, multicampus public research university offers programs from the baccalaureate through the doctorate for approximately 43,000 full-time and part-time students through ASU Main in Tempe; ASU West in northwest Phoenix; a major educational center in downtown Phoenix; ASU East, located at the Williams Campus (formerly Williams Air Force Base) in southwest Mesa; and other instructional, research, and public service sites throughout Maricopa County. ASU is a modern university that applies the strongest features of the traditional major research university to the rapidly evolving needs of Maricopa County and the state. ASU is governed by the Arizona Board of Regents.

As a leading public university, Arizona State University's goal is to become a world-class university in a multicampus setting, one of the very best public universities in the nation. The university's mission is to provide outstanding programs in instruction, research, and creative activity, to promote and support economic development, and to provide service appropriate for the nation, the state of Arizona, and the state's major metropolitan area. To fulfill its mission, ASU places special emphasis on the core disciplines and offers a full range of degree programs—baccalaureate through doctorate. To become competitive with the very best public universities, the institution recognizes that it must offer quality programs at all degree levels in a broad range of fundamental fields of inquiry. ASU will continue to dedicate itself to superior instruction, to excellent student performance, to original research, creative endeavor, and scholarly achievement, and to outstanding public service and economic development activities. As a result of this dedication, ASU was awarded the prestigious Research I university status in 1994, recognizing ASU as a premier research institution.

ORGANIZATION

Arizona State University is part of a university system governed by the Arizona Board of Regents, a body corporate and politic with perpetual succession under the constitution and laws of Arizona. The board consists of eight citizens appointed by the governor of the state for terms of eight years, and one student regent serving for one year with the elected governor and state superintendent of public instruction as members *ex officio*.

The regents select and appoint the president of the university, who is the liaison between the Arizona Board of Regents and the institution. The president is aided in the administrative work of the institution by the senior vice president and provost, other provosts, vice presidents, deans, directors, department chairs, faculty, and other officers. Refer to "Academic Organization," page 6, and "Administrative and Academic Personnel," pages 499–504.

The academic units develop and implement the teaching, research, and service programs of the university, aided by the university libraries, museums, and other services.

The faculty and students of the university play an important role in educational policy, with an Academic Senate, joint university committees and boards, and the Associated Students serving the needs of a large institution.

EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION

It is the policy of ASU to provide equal opportunity through affirmative action in employment and educational programs and activities. Discrimination is prohibited on the basis of race, color, religion, national origin, citizenship, sex, sexual orientation, age, disability, special disabled veteran or Vietnam era veteran status. Equal employment opportunity includes but is not limited to recruitment, hiring, promotion, termination, compensation, benefits, transfers, university-sponsored training, education, tuition assistance, and social and recreational programs.

ASU is committed to taking affirmative action in increasing opportunities at all levels of employment and to increasing participation in programs and activities by all faculty, staff, and students. Affirmative action is directed toward minority persons, women, special disabled veterans, Vietnam era veterans, and persons with disabilities.

University Policy Prohibiting Discriminatory Harassment

Harassment Prohibited. Subject to the limiting provisions of "Freedom of Speech and Academic Freedom" specified below, it is a violation of university policy for any university employee or student to subject any person to harassment on university property or at a university-sponsored activity.

Harassment Defined. Actions constitute harassment if (1) they substantially interfere with another's educational or employment opportunities, peaceful enjoyment of residence, physical security, and (2) they are taken with a general intent to engage in the actions and with the knowledge that the actions are likely to substantially interfere with a protected interest identified above. Such intent and knowledge may be inferred from all the circumstances.

Freedom of Speech and Academic Freedom. Neither this nor any other university policy is violated by actions that amount to expression protected by the state or federal constitutions or by related principles of academic freedom.

This limitation is further described in the ASU First Amendment Guidelines, the current version of which supplements this policy and is available in the Office of the General Counsel.

Relationship to the Work of the Campus Environment Team. If harassment is discriminatory, it falls within the education, monitoring, reporting, and referral functions of the Campus Environment Team. Harassment is discriminatory if taken with the purpose or effect of differentiating on the basis of another person's race, sex, color, national origin, religion, age, sexual orientation, disability, or Vietnam era veteran status.

HISTORY OF ARIZONA STATE UNIVERSITY

On February 26, 1885, House Bill 164, "An Act to Establish a Normal School in the Territory of Arizona," was introduced in the 13th Legislative Assembly of Arizona Territory by John Samuel Armstrong. The bill, strongly supported by Charles Trumbull Hayden of Tempe, passed the House on March 6 and the Council on March 11 and was signed by Governor F.A. Trible on March 12, 1885, thereby founding the institution known today as Arizona State University. Under the supervision of Principal Hiram Bradford Farmer, instruction was instituted on February 8, 1886, when 33 students met in a single room on land donated by George and Martha Wilson of Tempe.

The institution began with the broad obligation to provide "instruction of persons...in the art of teaching and in all the various branches that pertain to good common school education; also, to give instruction in the mechanical arts and in husbandry and agricultural chemistry, the fundamental law of the United States, and in what regards the rights and duties of citizens."

With the growth of the state, especially the surrounding Phoenix metropolitan area, the school has carried forward this charter, accompanied by successive changes in scope, name, and governance.

The Early Years. For the first 14 years, the school was governed by six principals. At the turn of the century and with another new name, Normal School of Arizona, President Arthur John Matthews brought a 30-year tenure of progress to the school.

He assisted in changing the school to an all-college student status; the normal school had enlisted high school students who had no other secondary educational facilities in Arizona. He embarked on a building schedule that included the state's first dormitories. Of the 18 buildings constructed while Matthews was president, six are still in use. His legacy of an "evergreen campus," with the import of many shrubs and trees and the planting of Palm Walk, continues to this day: the main campus is a nationally recognized arborum.

Matthews also saw to it that the Arizona Normal School was accredited outside the state. His service on national education organization boards was conducive to this recognition. The school remained a teacher's college in fact and theory during Matthews' tenure, although the struggle to attain status as a university was ongoing.

An extraordinary event occurred March 20, 1911, when former President Theodore Roosevelt visited the Tempe school and spoke from the steps of Old Main. He had dedicated the Roosevelt Dam the day before and was impressed with Arizona. He noted that construction of the dam would benefit central Arizona's growth and that of the Normal School. It would be another year before the territory became a state.

During the Great Depression, Ralph W. Swetman was hired as president to "sweep clean," firing those faculty who did not have master's or doctoral degrees in order to follow North Central Association of Colleges and Secondary Schools guidelines.

The Gammage Years. In 1933, Grady Gammage, then president of Arizona State Teachers College at Flagstaff, became president of Arizona State Teachers College at Tempe, a tenure that would last for nearly 28 years.

On March 8, 1945, the three state institutions of higher learning came under the authority of one Arizona Board of Regents, which oversees ASU today.

The phenomenal growth of the college began after the end of World War II. Dr. Gammage had foreseen that the G.I. Bill of Rights would flood campuses everywhere with returning veterans. Many of the veterans who had received military training in Arizona had fallen in love with the state and vowed to return after the war. The numbers within one year were staggering: in the

fall semester of 1945, 553 students were enrolled; over the weekend semester break in January 1946, enrollment increased 110% to 1,163 students. Successive semesters saw continuing increased enrollment.

Like his predecessor, Dr. Gammage oversaw the construction of a number of buildings. His greatest dream, that of a great auditorium, came five years after his death. He laid the groundwork for it with Frank Lloyd Wright, who designed what is now the university's hallmark building, Grady Gammage Memorial Auditorium, built in 1964.

Years of Growth and Stature. During the 1960s, with the presidency of Dr. G. Homer Durham, Arizona State University began its academic rise with the establishment of several new colleges (the College of Fine Arts, the College of Law, the College of Nursing, and the School of Social Work) and the reorganization of what became the College of Liberal Arts and Sciences and the College of Engineering and Applied Sciences. Perhaps most important, the university gained the authority to award the Doctor of Philosophy and other doctoral degrees.

The next three presidents—Harry K. Newburn, 1969–71, John W. Schwada, 1971–81, and J. Russell Nelson, 1981–89—and Interim President Richard Peck, 1989, led the university to increased academic stature, expansion of the campuses, and rising enrollment. With approximately 43,000 students, ASU is the fifth largest university in the nation.

On January 1, 1990, Dr. Lattie F. Coor, a native Arizonan, became 15th in the institution's succession of principals and presidents. He has highlighted undergraduate education, research, cultural diversity, and economic development as the "four pillars" of the university's agenda and has taken steps in these areas by further defining the role of ASU West and by initiating the establishment of the College of Extended Education, approved by the Arizona Board of Regents July 20, 1990.

Research I Status. ASU was named a Research I university by the Carnegie Foundation for the Advancement of Teaching in early 1994. Nationally, 88 universities have been granted this status, indicating successful garnering of support for research projects and educating future scientists.

Athletics

The original nickname for the Normal School of Arizona athletic teams was the Owls. Athletics other than Sunday hikes and lawn tennis were not part of the early curriculum.

During President Matthews' tenure, some team competition began. The Tempe Bulldogs saw some interesting and rough competition with the University of Arizona Wildcats (almost always on the losing end), but usually they competed against smaller schools around the state.

Dr. Gammage realized that athletics was a way to garner monetary support from the community. With the establishment of the Sun Angel Foundation in 1946, a new era began. The college's teams became the Sun Devils and, with a succession of fine coaches and an increasingly strong commitment to sports, became known worldwide. Today the university attracts students from throughout the world to its athletic programs.

In 1979, the university joined the Pacific-10 Conference. In 1987, ASU became the first Arizona football team to play in the Rose Bowl, defeating the University of Michigan Wolverines 22–15.

UNIVERSITY CAMPUSES AND SITES

ASU Main. ASU Main is located near the heart of metropolitan Phoenix in the city of Tempe (population 156,844). Nearby are the municipalities that make up the fast-growing Valley of the Sun: Chandler, Gilbert, Glendale, Mesa, Scottsdale, and other communities.

ASU Main comprises more than 700 acres and offers outstanding physical facilities to support the university's educational programs. Buildings are modern, air-conditioned, and attractively designed.

Broad pedestrian malls laid out in an easy-to-follow grid plan, bicycle lanes connecting all parts of the university, and spacious lawns and subtropical landscaping characterize a campus serving the physical, aesthetic, and educational needs of students, faculty, and staff.

ASU West. ASU West is a campus of Arizona State University that offers only upper-division and graduate courses. It is located in northwest Phoenix to serve the higher educational needs of residents of western Maricopa

County. As a comprehensive campus, the institution is developing a broad spectrum of professional and academic programs that share a liberal arts foundation and an interdisciplinary emphasis.

The campus is located between 43rd and 51st Avenues on West Thunderbird Road in Phoenix. Immediately west of the campus is the city of Glendale. The core campus was completed in March 1991 and includes the Fletcher Library, the Sands Classroom Building, the Classroom Laboratory/Computer Building, the Faculty and Administration Building, Kiva Lecture Hall, and the University Center Building.

For more information, see pages 505–516 of this catalog. For complete information and course listings, see the *ASU West 1996–97 Catalog*.

ASU East. ASU East is located at the former Williams Air Force Base at 6001 S. Power Road in east Mesa. ASU East opened for classes in fall 1994 with a selected set of class offerings. For more information, see pages 420–441.

ASU Downtown Center. Located in downtown Phoenix at the Mercado, 502 E. Monroe, the ASU Downtown Center offers credit and noncredit courses of interest to employees in private businesses and government agencies and to individuals seeking personal growth and enrichment. Noncredit microcomputing training classes, offered by the Personal Computer Training Program, are held at the center and are taught during daytime and evening hours. In addition, noncredit and certificate programs are offered to working professionals by the Professional Programs and Institutes unit of the College of Extended Education. The center also provides students with mainframe access through its computer lab and library services. The Joint Urban Design Studio, administered by the College of Architecture and Environmental Design, is also housed in the ASU Downtown Center. For more information, see page 401 or call 602/965–3046.

ASU East Valley Center. The East Valley Center, located in southeast Mesa at the former Williams Air Force Base, extends the university's programs and resources into the eastern part of Maricopa County. See page 401 for more information.

ASU Extended Campus. The ASU Extended Campus is a network of centers, sites, schedules, and technologies designed to increase accessibility of university resources to the public. It enriches the capability of ASU Main, West, and East to serve the community. For more information, see pages 399–403.

ASU Research Park. The mission of the Research Park is to attract to Arizona new corporate and regional headquarters and research and development firms that broaden the base for potential research among ASU departments, interact with graduate students, consult with university faculty, and provide employment opportunities for graduates of ASU.

Long-term excess revenues from ground leases within this 324-acre park flow back to the ASU Foundation to be used for scholarships. The Research Park has several major tenants—Fiberite, VLSI, Walgreens Health Care Plus, Motorola University, the planned Motorola Flat Panel Display Division Facility, and the National Association of Purchasing Management—a 50,000-square-foot multitenant building developed by Transamerica Corporation, and the Lakeside Technology Center, a 44,000-square-foot multitenant building developed by Price-Elliott Research Park, Inc. The Research Park is part of the ASU effort to become a major research university by attracting high-quality private and public research firms and institutes.

ASU Sun Cities Center. The ASU Sun Cities Center educational facility is located in Sun City, Arizona, the nation's largest retirement community. The Lifelong Learning Program offers predominantly noncredit courses and includes a curriculum tailored specifically to the interests of the retirement community. Each year more than 150 courses from approximately 30 disciplines are taught. Weekly lectures also are available throughout the year in a variety of subjects. For more information, see pages 401–402 or call 602/965–5600.

Camp Tontozona. Located in the famed Mogollon Rim country near Kohl's Ranch, northeast of Payson, this continuing education facility of the university serves the needs of academic departments conducting teaching and research in mountain terrain. The camp

is also available to faculty, staff, graduate students, and alumni for family use.

UNIVERSITY LIBRARIES AND COLLECTIONS

The collections of the university's libraries comprise more than 3 million volumes, approximately 6.3 million microform units, and more than 35,000 periodical and serial subscriptions. Computer access to commercially and locally produced databases and the ability to borrow research materials from other libraries enhance local resources. ASU is a member of the Association of Research Libraries and the Center for Research Libraries.

For telephone numbers, see page 524.

Charles Trumbull Hayden Library.

The Charles Trumbull Hayden Library houses the largest multidisciplinary collection. In addition to the open stack areas, separate collections and service areas include Current Periodicals and Microforms; Government Documents; Interlibrary Loan and Document Delivery Services; Labriola National American Indian Data Center; Library Instruction, Systems, and Technology (L.I.S.T.); Reference; Reserve; Special Collections; and Archives and Manuscripts, which includes the Arizona Collection, the Chicano Research Collection, and the Visual Literacy Collection.

Specialized collections include comprehensive holdings of the Pre-Raphaelite period, a 14th-century manuscript on algebra, the child drama collection, the Thomas Mosher collection, the William S. Burroughs collection, and the papers of several major Arizona political figures.

Architecture and Environmental Design Library.

The Architecture and Environmental Design Library, located in the College of Architecture and Environmental Design/North building, contains books and periodicals pertinent to areas of study within the college. See page 197 for more information.

Arizona Historical Foundation Library.

Under a cooperative agreement with ASU, the Arizona Historical Foundation houses a library of several thousand volumes, manuscript collections, maps, and photographs, and a large collection of audio/visual materials. Housed in the Charles Trumbull Hayden Library, the collection's focus

is on the history of Arizona and the Southwest.

Fletcher Library. Located at the ASU West campus, Fletcher Library utilizes a range of electronic systems, from compact discs to telecommunications networks, to provide access to resources and delivery of materials. Its holdings include over 250,000 volumes, 3,400 serial subscriptions, and one million microfilms selected to complement ASU West course offerings.

Law Library. The John J. Ross-William C. Blakley Law Library is located on McAllister Avenue. See page 357 for more information.

Music Library. A large collection of music scores, recordings, books, music reference materials, and listening facilities for individuals and groups are located on the third floor of the Music Building.

Daniel E. Noble Science and Engineering Library. The Daniel E. Noble Science and Engineering Library houses books, journals, and microforms in the sciences and engineering, the Map Collection, and the U.S. Patent and Trademark Depository.

University Archives. The University Archives collection (1885–present) of university theses and dissertations, administrative records of the university, historical photographs and personal papers of faculty, staff, and alumni as well as student, faculty, and official university publications are available for use at the Luhrs Reading Room in Hayden Library. The historic University Archives building on Tyler Mall is the home of the 1907 Gallery, which hosts exhibits of historical photographs from the collections of the Department of Archives and Manuscripts.

PERFORMING AND FINE ARTS FACILITIES

Computing Commons Gallery. One of the unique features of the Computing Commons building is an art gallery, located off the main lobby in the northwest corner of the building. The gallery has design features that are unique for showcasing technology-based artwork and displays. The Computing Commons gallery can support display of national online computer art networks (e.g., via Internet) and holographic displays, as well as more traditional two-

dimensional graphic presentations. This is an exciting decade for the arts as new technology-based tools and techniques open new avenues for creativity, as demonstrated by the exhibits in the Computing Commons Gallery.

Dance Studio Theatre. Located in the Physical Education Building East, the Dance Studio Theatre is a 6,000-square-foot dance studio that also serves as a proscenium-style performance space. The 215-seat theatre is devoted to informal and formal showcases of student and faculty choreographic work.

Drama City. Representing a synthesis of the creative energies of the Institute for Studies in the Arts and the Department of Theatre, Drama City is an 1,800-square-foot black-box theatre that serves as a laboratory for the development and presentation of experimental and innovative theatrical and interdisciplinary works.

Gallery of Design. Housed in the College of Architecture and Environmental Design, the Gallery of Design features traveling exhibitions on design and urban issues.

Paul V. Galvin Playhouse. Built to stage the largest productions of the ASU Theatre, the Paul V. Galvin Playhouse is a 496-seat proscenium-stage theatre set at the east end of the Nelson Fine Arts Center. The Department of Theatre's annual season of 12 to 15 plays also includes productions in the Lyceum and Prism theatres and the Fine Arts Center Studios.

Grady Gammage Memorial Auditorium. A versatile center for the performing arts designed by Frank Lloyd Wright and named for the late President Grady Gammage, Grady Gammage Memorial Auditorium seats 3,000 and has won wide acclaim for its design and acoustics. In addition to the great hall and related facilities—including the Aeolian-Skinner organ contributed by Hugh W. and Barbara V. Long—the building contains classrooms and workshops for the College of Fine Arts.

Katzin Concert Hall. Located in the new music building expansion, the Katzin Concert Hall seats 350 people. Primarily used for solo and chamber music recitals, the hall houses a nine-foot Hamburg concert Steinway piano. The acoustics are enhanced by the

maple-paneled stage and the multifaceted walls and ceiling.

Louise Lincoln Kerr Cultural Center. Located in Scottsdale, the Louise Lincoln Kerr Cultural Center offers cultural events, especially in the performing arts, to the community.

Lyceum Theatre. A small but technically sophisticated 164-seat proscenium-theatre, the Lyceum Theatre is a theatre laboratory devoted to the work of student playwrights, directors, and actors.

Music Theatre. As part of the music complex, the Music Theatre, modeled after the Wagnerian Theatre in Bayreuth, Germany, rises five stories and seats an audience of 500. This theatre is the home of many opera and musical productions.

J. Russell and Bonita Nelson Fine Arts Center. Designed by Albuquerque architect Antoine Predock, the J. Russell and Bonita Nelson Fine Arts Center is a spectacular, 119,000-square-foot village-like aggregate of buildings that includes five galleries of the ASU Art Museum, the Paul V. Galvin Playhouse, the University Dance Laboratory, seven specialized theatre and dance studios, a video studio, and a variety of scenic outdoor features, including courtyards, fountains, pools, and a 50-by-100-foot projection wall designed for outdoor video.

Northlight Gallery. The Northlight Gallery is dedicated to museum-quality exhibitions of historical and contemporary photography. Located in Matthews Hall, it is open during the academic year.

Organ Hall. Also located in the new music building expansion, the Organ Hall houses the Fritts Organ. This tracker-action pipe organ is designed to capture the qualities of baroque European organs. The hall is designed to complement the organ with a barrel-vaulted ceiling and wooden benches to seat 175 persons.

Prism Theatre. The Prism Theatre is an alternative black box space devoted to multiethnic, new, or experimental works.

Recital Hall. Located on the fifth floor of the music building, the Recital Hall is an intimate 125-seat facility that opens onto a rooftop courtyard.

Sundome Center for the Performing Arts. As America's largest single-level theatre, the Sundome Center for the Performing Arts in Sun City West has 7,169 seats. The theatre is equipped with sophisticated and state-of-the-art lighting systems, and a single-span roof affords each seat a clear view. As one of Arizona's premier entertainment venues, the Sundome provides a varied array of top entertainment from Las Vegas concerts to classical ballets to celebrity lectures.

Television Station KAET. KAET, Channel 8, Phoenix, is licensed and owned by the Arizona Board of Regents and operated by Arizona State University. Studios of the award-winning station are located in the Stauffer Communication Arts Building. The station is affiliated with the Public Broadcasting Service (PBS) and broadcasts 24 hours daily. Program information is available from the KAET program manager (602/965-3506).

University Art Museum. The University Art Museum collections are housed in a large complex of galleries and art study rooms in two locations: the Nelson Fine Arts Center and the second floor of the Matthews Center. The Oliver B. James Collection of American Art ranges from the early 18th century to the contemporary and includes major works by Stuart, Ryder, Homer, and the Ash Can School painters. Master works by great printmakers such as Durer, Rembrandt, Whistler, and Hogarth are often featured in special exhibitions selected from the university's extensive print collection.

The gallery devoted to Latin American art features folk art as well as paintings by celebrated 20th-century artists Rivera, Siqueros, and Tamayo. The museum also displays many fine examples of 19th- and 20th-century crafts, paintings, and sculpture.

The contemporary art holdings include works by Vernon Fisher, Leon Golub, Sue Coe, Luis Jimenez, and Robert Colescott. Exhibitions curated by the museum emphasize contemporary art and new media, crafts, and Mexican art.

University Dance Laboratory. A flexible performance space within the Nelson Fine Arts Center, the University Dance Laboratory is designed specifically for experimental dance productions. Along with the Dance Studio

Theatre in the Physical Education Building East, the University Dance Laboratory is used by the Department of Dance for its season performances.

Harry Wood Gallery. Housed in the Art Building (ART 120), the Harry Wood Gallery provides temporary exhibitions of the visual arts during the academic year.

COMPUTING FACILITIES AND SERVICES

Computers are a fundamental tool for research, instruction, and learning in every college and department at ASU. A variety of computing equipment and services are available for use by students, faculty, and staff.

Programming, statistical, graphics, and other applications are provided on microcomputers and mainframe computing systems. These services, including university-wide electronic mail and the library's online catalog, can be accessed through a communications network from many sites and offices on campus, as well as from off-campus offices and homes via a phone connection. Communication with other research facilities is possible through the Internet.

A wide range of information on campus activities and related topics is available online. On the World Wide Web (WWW), the ASU home page can be accessed at <http://www.asu.edu>. This WWW site features a complete source of ASU information with text, photos, audio, and video. Via the Internet, students, faculty, and staff of ASU also have access to the thousands of information systems around the world. The ASU Server contains such information as a phone and electronic mail directory, the *Schedule of Classes*, the athletic calendar of events, weather forecasts from around the United States, and information from various colleges, departments, and organizations.

Educational services to assist faculty, students, and staff include online documentation, online consulting facilities, online tutorials, videotaped and written materials, and noncredit seminars.

The following service centers are provided for the academic community.

Computing Commons. The Computing Commons was opened in 1993 to provide the university with an ideal setting to learn and experience the vast new frontier of high-performance com-

puting. The purpose of the Computing Commons is to draw together students, faculty, and staff from all disciplines and create an environment designed to foster maximum interaction. The building and its facilities are drawing national recognition and acclaim as a model facility for the support of instruction and research in a technology-based environment. The commons houses a 200-workstation student computing site open 24 hours a day, nine electronic classrooms, a Visualization Center, COMPASS, a computer store, and a technology-based art gallery.

Assistance Center. The Computing Assistance Center (COMPASS) has a library of reference manuals, computing periodicals, and other information concerning computing systems and software. Self-paced training is available for a variety of subjects on Windows, DOS, Macintosh, and mainframe computers. COMPASS also distributes communication, virus protection, and other site-licensed software.

Student Consulting. This service is available to ASU students using the academic computing systems either on campus or through dial in. Student Consulting focuses on the needs of undergraduate and graduate students in classes.

Instructional Services. The Consortium for Instructional Innovation (CII) assists faculty with computing support for instructional and learning technologies, including graphics, videos, and courseware development. See page 30 for more information.

Research Computing Support. Assistance is available to researchers, including help with scientific programming and use of statistical software, and support for interactive visualization and "hard copy" presentation of data and analysis results.

A variety of computation facilities are provided to support the ASU community. Everything from workstations to mainframes are available as is access to the national NSF Centers.

Visualization Center. The Visualization Center provides support services and resources for faculty, staff, and graduate students in visualizing the results of computational science and by acting as a test bed of software, hardware, and communications for interactive viewing of scientific data.

Computer Accounts. Computer accounts are needed to access many of the computing systems and can be obtained from the Computer Accounts Office.

ALUMNI ASSOCIATION

Founded in 1894, the Alumni Association involves graduates and former students throughout Arizona and around the world. It communicates with all alumni and provides services to dues-paying members. The Alumni Center, located at 601 E. Apache Blvd., maintains more than 160,000 files of graduates. The Alumni Association strives to promote effective interest in and loyalty to ASU on the part of alumni and the general public.

PROGRAM ASSESSMENT AND THE OFFICE OF UNIVERSITY EVALUATION

The Office of University Evaluation is a research and service facility that focuses on assessing and improving the effectiveness of the university's academic and support programs. The office conducts, coordinates, and manages research designed to measure the degree to which courses, curricula, and academic programs impart knowledge and skills to students as well as the quality of support provided to students. The results of these studies, or assessments, are used to enhance both the support provided to students and the intellectual integrity of an ASU education.

In order for the university to assess and improve its programs, periodic measurement of student experiences, perceptions, and intellectual growth must be obtained. When asked by the university, students are expected to participate in one or more evaluative procedures, such as the ASU Report Card. These evaluative procedures are designed to assess the efficacy of the total university experience, including teaching and learning and support programs and are not used in individual grading. The information obtained is one of the means used to improve the quality of the educational experience for this and future generations of ASU students.

DIVISION OF UNDERGRADUATE ACADEMIC SERVICES

The Division of Undergraduate Academic Services was formed in 1993 to provide a focus for the university's undergraduate initiative.

The goals of the division are to improve the five-year graduation rate of ASU undergraduates, increase the retention of first-year students, improve the foundational skills (numeracy and literacy) of undergraduates, and increase employer and graduate satisfaction with an ASU education.

The division includes the Writing across the Curriculum program (for course listings, see page 132), the University 100 program, and the University Academic Advising Center (see page 57). The Bachelor of Interdisciplinary Studies (B.I.S.) is administered through this division. For more information about the B.I.S., see pages 95–96.

UNIVERSITY

UNI 100 Academic Success at the University. (3) F, S, SS

Mastery in time management, notetaking, test taking, college text reading, university library use, goal setting, and use of university resources. Lecture, discussion, co-op learning. Prerequisite: freshman or sophomore or transfer student standing.

301 Foundations of Interdisciplinary Studies. (3)

302 Interdisciplinary Studies. (3)

401 Senior Seminar: Interdisciplinary Studies. (3)

402 Senior Interdisciplinary Project. (3)

RESEARCH CENTERS, INSTITUTES, AND LABORATORIES

These units serve the university's mission in research. They are overseen by seven of the colleges and the vice president for Research and Strategic Initiatives.

College of Architecture and Environmental Design

Herberger Center for Design Excellence. The Herberger Center for Design Excellence serves the Phoenix area through research, publications, and symposia regarding urban design, design, and environmental planning issues. For more information, call 602/965-6693.

College of Business

Arizona Real Estate Center. The Arizona Real Estate Center serves a multi-function research and educational role

to foster better understanding of the real estate sector of the Arizona economy. Housing, commercial real estate, and construction activity data for Arizona and Maricopa County are collected by the center and are utilized for a variety of ongoing projects, including the calculation of affordability indexes and the computation of housing appreciation figures for the metropolitan Phoenix area. The center's annual outlook series provides a public forum for prominent members of the real estate industry to present their perceptions of market conditions.

For more information, contact the director, Arizona Real Estate Center, BA 319, 602/965-5440.

Center for Advanced Purchasing Studies (CAPS). This center, established in November 1986, is a national affiliation agreement between the ASU College of Business and the National Association of Purchasing Management (NAPM). It is the first and only program of its kind in the nation and is located in the Arizona State University Research Park, about eight miles south of the main ASU campus. CAPS conducts in-depth research into the problems facing the purchasing profession today and, through its studies, seeks to improve purchasing effectiveness and efficiency, and the overall state of purchasing readiness.

For more information, call 602/752-2277, or contact

DIRECTOR, CENTER FOR ADVANCED
PURCHASING STUDIES
ASU RESEARCH PARK
2055 E. CENTENNIAL CIRCLE
PO BOX 22160
TEMPE AZ 85285-2160

Center for Business Research. The Center for Business Research has been a consistent source of information on the Arizona and metropolitan Phoenix economies since 1951. Both the business community and the public have had access to the economic indicators produced by the ongoing projects of the center, including quarterly net migration estimates for Arizona and Maricopa County, and the metropolitan Phoenix Consumer Price Index. The center has conducted projects for local government agencies and businesses, such as the economic impact of aviation in Arizona, a study of seasonal migration to Arizona, and an analysis of the state's hospital industry. A monthly publication of the center, *AZB/Arizona*

Business, plays a major role in disseminating to the public the economic information compiled by the research centers of the College of Business. The staff within the center is available to respond to inquiries and to provide available data.

For more information, contact the director, Center for Business Research, BA 319, 602/965-3961.

Center for Financial System Research. This center serves the national financial, policy-making, and academic communities through research, publications, conferences, and educational programs. The focus of such activities is on the changing nature of the domestic and international financial system with such specific areas as the interaction between financial markets, deposit insurance reform, the deregulation of financial institutions, the financing of mergers and acquisitions, and the effect of government policy on financial markets receiving recent attention.

For more information, contact the director, Center for Financial System Research, BAC 319, 602/965-5229.

Economic Outlook Center. The Economic Outlook Center, established in 1985, specializes in economic forecasts of Arizona and the Western states. The center publishes the *Arizona Blue Chip Economic Forecast* (monthly), *Metro Phoenix Blue Chip Economic Forecast* (quarterly), and *Western Blue Chip Economic Forecast* (10 issues per year). The center also publishes *Blue Chip Job Growth Update* (monthly), an update of current job growth in the United States.

For more information, contact the director, Economic Outlook Center, BAC 319, 602/965-5543.

First Interstate Center for Services Marketing. The First Interstate Center for Services Marketing (FICSM) is North America's leading university-based hub for the study of services marketing and management. It was established to fill organizations' emerging need for marketing theory and research that is related to the unique challenges service organizations face. Such information is essential in today's environment of deregulation and intense competition.

The center conducts research on such topics as service quality; the dynamics of service delivery; professional services such as health care, banking, and insurance; and service personnel. A

leader in the business and academic communities, FICSM's work advances scholarly understanding and provides firms with applicable principles, concepts, and tools.

The center offers specialized education and training. Its annual Services Marketing Institute is the premier education program for executives in service industries and in companies devoted to providing quality service. The annual "Activating Your Firm's Service Culture" Symposium addresses the issues firms face as they move to instill a more service-oriented culture.

The center's charter member list is a who's who of service companies, including AT&T, The Dial Corporation, Marriott Corporation, IBM, Xerox Corporation, First Interstate Bank, and Baxter Healthcare Corporation.

For more information, contact the director, First Interstate Center for Services Marketing, BAC 451, 602/965-6201.

College of Education

Center for Bilingual/Bicultural Education. Bilingual education is an internationally significant field that crosses many disciplines. In 1980, the College of Education formally instituted a Center for Bilingual/Bicultural Education with a multidisciplinary perspective addressing local, national, and international concerns. The center initiates and coordinates research ventures in bilingual/bicultural education and is responsible for assembling faculty and staff expertise and outside resources to accomplish research goals.

The center also supports instructional activity in bilingual curricula and related program efforts within the college. Because of the cross-disciplinary nature of bilingual education programs, a college-wide effort is necessary to develop, evaluate, and strengthen such programs.

The center is committed to

1. enhancement of broadly based faculty participation in research;
2. acquisition of external research and training resources;
3. enhancement of communication networks with other local, state, national, and international institutions and agencies that can increase the center's ability to achieve its objectives; and
4. development of a scholarly dissemination strategy incorporating

colloquia, conferences, and publications.

For more information, contact the director, Center for Bilingual/Bicultural Education, ED 414, 602/965-7134.

Center for Indian Education. The Center for Indian Education is an interdisciplinary research and service center administered through the College of Education. It promotes studies in American Indian policy and administration that contribute to scholarship and effective practices in education, professional training, and tribal capacity building. It is structured to foster relations between the university and sovereign tribes, and to provide training and technical assistance for community programs. The center publishes the *Journal of American Indian Education* and sponsors workshops and colloquia that bring together scholars and tribal community leaders.

The center provides leadership through a group of American Indian faculty and is organized on the basis of scholarly expertise of the faculty. In addition to College of Education faculty, responsibilities are shared by faculty from the School of Social Work, the School of Justice Studies, the College of Liberal Arts and Sciences, and the College of Law. Areas currently studied include administrative leadership, policy analysis, bilingual education, health and welfare policy, justice studies, and program development in professional studies.

For more information, contact the director, Center for Indian Education, ED 415, 602/965-6292.

College of Engineering and Applied Sciences

Aerospace Research Center. This center was established in the College of Engineering and Applied Sciences (CEAS) in July 1990. The center's purpose is to promote interdisciplinary programs in aerospace-related fields, to establish working relations with local industry, and to enrich the graduate and undergraduate programs in technical areas of importance to the aerospace industry in the state and nation. The center's technical scope is broad, including but not limited to propulsion, automation, aerodynamics, structures, materials, aeroelasticity, performance, flight mechanics, guidance, robotics, safety, avionics, control, telecommunications, and planetary science. Re-

search projects are supported by a wide variety of laboratory facilities and extensive computational equipment. Projects are funded both by government agencies as well as by several industrial sponsors.

The Aerospace Research Center is headed by a director, reporting to the dean of the college. The research is conducted by faculty, research associates, and graduate students from several departments within CEAS and the College of Liberal Arts and Sciences. With this cross-departmental breadth, the center provides an infrastructure supporting multidisciplinary research activities, while at the same time providing an aerospace-research focal point in the university. It is also a convenient contact point for external organizations with aerospace interests, and facilitates the transfer of aerospace research results to these organizations. For more information, contact the ARC director, 602/965-2553.

Center for Advanced Transportation Systems Research. This center was established in 1983 in the College of Engineering and Applied Sciences (CEAS). The center's purpose is to advance interdisciplinary research in transportation agencies, and to support the undergraduate and graduate programs providing professional and academic education in transportation. The center's technical scope currently includes traffic engineering; pavement materials testing and management; human factors in vehicle operation; geographic information systems in transportation, urban travel behavior; travel demand management; freeway management systems; location and network optimization; infrastructure design, construction, and operation, and technology transfer services to local governments in Arizona and the Southwest. The center supports a transportation computer laboratory and materials testing laboratory for faculty and graduate student research.

For more information, contact the director, Center for Advanced Transportation Systems Research, ERC 405, 602/965-2001.

Center for Agribusiness Policy Studies. The Center for Agribusiness Policy Studies, located at ASU East, carries out research and development relating to agribusiness, rural development, multiple use of scarce resources, and public policy. The center addresses

regional, national, and international development in the context of global and competitive markets for agricultural products and inputs. Of particular interest is the development of private sector strategies and public policy alternatives that go beyond traditional government subsidy programs to find innovative, market-oriented ways to enhance competitiveness in international markets, increase rural incomes, and create new jobs. A related center concern is the development of "win-win" strategies for environmental management and the multiple use of scarce natural resources by competing interest groups. The goal of such policy development is to resolve or manage conflict regionally, nationally, or globally and to promote long-term, sustainable agriculture in terms of regional economic growth. Of particular interest to the center are innovative rural credit programs for developing nations, strategic marketing to identify profitable "niche" markets and further processing to create jobs and add value to agricultural products.

For more information, contact the director, Center for Agribusiness Policy Studies, ASU East, 602/965-3585.

Center for Energy Systems Research. This center coordinates energy-related research within the College of Engineering and Applied Sciences. Because energy impacts almost all areas of technology, as well as the socioeconomic system, energy research involves investigators from diverse disciplines and backgrounds. Significant state, regional, and national energy research is conducted by the 29 faculty members of various disciplines who are associated with the center. Their research is facilitated by 16 laboratories and other major facilities. Research areas include combustion; thermal radiation and thermal insulation; heat and mass transfer; solar thermal and photovoltaic systems; biomass and fuels conversion; thermionics; power electronics; power systems analysis; dielectrics; laser and radiation measurement. New research emphasis areas in "advanced gas turbine systems" and "transport phenomena in manufacturing of energy systems" are being established. The center has also recently added two unique solar test facilities: a photovoltaic qualification module test laboratory which tests PV modules to all standards of IEEE, ASTM, IEC, and UL; and a solar

thermal research and test laboratory, which tests solar water heating systems to SRCC standards. The center's faculty affiliates are from various academic departments. They supervise student energy research projects as part of work contributing to degree programs offered by their departments.

For more information, contact the director, Center for Energy Systems Research, ENGR 509, 602/965-2896; fax 602/965-0745; e-mail tong@asu.edu.

Center for Research in Engineering and Applied Sciences. The Center for Research in the College of Engineering and Applied Sciences was established to provide opportunities for faculty and graduate student cooperation to define and develop solutions to current and anticipated problems. The center provides research support services for all research in the college as well as interfacing with the research offices of the university and other colleges. Basic policy is to support and enhance the educational program through involvement of students and faculty in realistic applications of research in the applied sciences and engineering. Government and industry sponsorships are sought, with emphasis on Arizona problems, industries, and institutions. Specialized and interdisciplinary efforts are currently developed in such areas as acoustics, agribusiness, air pollution, alternative energy, applied mechanics, artificial intelligence, automated manufacturing, bioengineering, biomass to energy conversion, communications, computational microelectronics, computer-aided design and manufacturing (CAD/CAM), computer-integrated manufacturing (CIM), computer science, data and information systems, electrical characterization, environmental resources and control, expert systems, fluid mechanics, fuels, heat transfer, image processing, lasers, materials, mass transfer, metallurgy, nuclear radiation, photovoltaics, plasma, plastics, power systems, analyses, range management, robotics, semiconductor materials and fabrication, semiconductor processing, signal processing, soil mechanics, solar thermal energy, solid state electronics and systems design and analysis, surface analysis, systems design and analysis, telecommunications, thermodynamics, transportation systems, turbines, very-large-scale integrated circuits, waste management, and water resources.

For more information, contact the director, Center for Research in Engineering and Applied Sciences, ECG 127, 602/965-1725.

Center for Solid State Electronics Research. CSSER focuses on research in the areas of semiconductors crystal growth, both by bulk and epitaxial techniques, device characterization and modeling, defect behavior in semiconductors material characterization, processing, fine line lithography, surface analysis, and transport. Major programs address semiconductor device modeling, transport theory, optoelectronics, ferroelectrics, semiconductor processing, microwave devices, and ultra-submicron devices. New programs address synthetic neural systems and their impact on VLSI design. Research in the specially designed facilities includes various aspects of submicron dimension devices.

For more information, contact the director, Center for Solid State Electronics Research, ENGR 115, 602/965-3708.

Computer Integrated Manufacturing Systems Research Center. This multidisciplinary engineering research center focuses its attention on the design and manufacture of discrete parts. Computer Integrated Manufacturing (CIM) provides the research foundation for such areas as information integration, including computer aided design and heterogeneous database; controls integration, including local area networks and vision; material flow integration, including robotics; and overall systems and man-machine interaction. Laboratories for each discipline have been established.

For more information, contact the director, CIM Systems Research Center, ENGR 552, 602/965-3709.

Telecommunications Research Center. Telecommunications play a vital role in home, commercial, entertainment, educational, scientific, and military systems. The Telecommunications Research Center focuses its interests and activities in research and educational programs. The approach is to conduct basic and applied research, develop technologies, and provide education programs in all major areas of telecommunications, from signal generation to reception. The targeted areas of excellence are antennas, propagation, and scattering; microwave circuits, de-

vices, and measurements; optical communications; signal processing; broadband switching; and communication systems. Ultra-modern laboratories and computational facilities are associated with the center.

For more information, contact the director, Telecommunications Research Center, GWC 411, 602/965-5311.

College of Fine Arts

Institute for Studies in the Arts. As the research center for the College of Fine Arts, the Institute for Studies in the Arts (ISA) serves as a laboratory for the research and development of new art forms, new ideas and concepts, and innovative technologies for artistic expression; a network for communication among creative scholars both within and outside the arts; and a resource base for the documentation, evaluation, and dissemination of research in the arts. ISA addresses the needs of a variety of populations through technical and monetary support and sponsorship of research projects, performances, exhibitions, and symposia.

ISA facilities include an experimental performance studio at Drama City and a state-of-the-art video production and post-production laboratory in Matthews Center. ISA maintains a database of interdisciplinary scholarship in the arts and actively seeks to communicate with researchers from diverse backgrounds in the ASU community and worldwide.

ISA is open to a wide range of research proposals from both faculty and graduate students, provided such proposals address the ISA mission of experimentation and innovation in the arts.

For information, contact the director, Institute for Studies in the Arts, MCENT 252, 602/965-9438.

College of Law

Center for the Study of Law, Science and Technology. Located in the College of Law, the center conducts research, edits the *Jurimetrics Journal of Law, Science and Technology* in cooperation with the American Bar Association Section on Science and Technology, and sponsors seminars, workshops, and conferences. Through these activities, the center seeks to contribute to the formulation and improvement of law and public policy affecting science and technology and to the wise application of science and technology in the

legal system. Current areas of research include communications and telecommunications law, computer-related law, forensic science and statistics, legal issues and biotechnology, law and medicine, and law and social science.

For more information, contact the director, Center for the Study of Law, Science and Technology, LAW 102, 602/965-2124.

College of Liberal Arts and Sciences

Arizona Center for Medieval and Renaissance Studies (ACMRS). The Arizona Center is a research unit serving affiliate scholars from ASU, Northern Arizona University, and the University of Arizona. It represents a variety of disciplines including history, literature, philosophy, religion, language, music, art, and science. ACMRS enriches academic offerings in medieval and Renaissance studies by sponsoring one or two visiting professors each year. Graduate research assistantships are also available through the center.

Significant opportunities for the study of the Middle Ages and the Renaissance exist at ASU. Hayden Library has an extensive microfilm collection and many rare books in medieval and Renaissance studies. ACMRS also sponsors a lecture series each semester covering a variety of topics.

Recently instituted programs include an annual conference, a public symposium, a summer study abroad program at Cambridge University (United Kingdom), and student exchange programs with the University of Copenhagen and the University of Kalmar (Sweden).

Since 1995, ACMRS supports and operates the editing of *Medievalia et Humanistica: Studies in Medieval and Renaissance Culture*, an annual journal whose editorial board includes members from university including Harvard, Yale, Princeton, Stanford, Oxford, Cambridge, and Tours. In collaboration with the University of Massachusetts at Dartmouth and the Medieval and Renaissance Committee of the University of Michigan, the center sponsors and co-edits the interdisciplinary journal, *Mediterranean Studies*, an annual publishing articles on all aspects of the Mediterranean region. ACMRS will begin an essay collection series titled "Arizona Studies in the Middle Ages and Renaissance" with Brepols Publishers (Belgium).

For more information, contact the director, Arizona Center for Medieval and Renaissance Studies, SS 224C, 602/965-5900. For a list of advisors, see "Interdisciplinary Studies" in the "College of Liberal Arts and Sciences" section of the *General Catalog*.

Cancer Research Institute. Significant advances in the treatment of human cancer and other serious medical problems depend upon scientists well trained in organic chemistry, biochemistry, and biology. The Cancer Research Institute provides graduate students with the specialized training necessary for research in the discovery and development of effective anticancer drugs. Among various activities, laboratory personnel are pursuing a unique program concerned with isolation, structural identification, and synthesis of naturally occurring anticancer agents from marine animals, plants, and marine microorganisms.

For more information, contact the director, Cancer Research Institute, PSC 357, 602/965-3351.

Center for Asian Studies. Through its East Asian and Southeast Asian studies programs, the center serves as research coordinator for Asian studies' faculty and graduate students in a variety of disciplines. The center sponsors colloquia and research conferences. It also publishes two scholarly *Monograph Series* and a newsletter on Southeast Asian studies, *Suvannabhumi*, which have an international readership. Graduate students may apply for research assistantships in the center and its program.

The center administers student exchange programs with a number of universities in Asia. The center also sponsors a graduate student colloquium and film series on Asian topics. A reading room is located in the center office suite offering a variety of Asian and English language publications and newspapers from and about Asia.

For more information, contact the director, Center for Asian Studies, WHALL 109, 602/965-7184.

Center for Latin American Studies. Arizona maintains an ever-growing interest in Latin America that draws upon an extensive experience of historical and geographical ties. The Center for Latin American Studies is the focal point for these interests at ASU.

Through its program, the center serves the university community and maintains strong ties with various Latin American organizations in the state and the nation. Principal activities are coordinating Latin American studies at the undergraduate and graduate levels; sponsoring student exchange programs, events featuring Latin American arts and culture, numerous seminars, and research conferences; publishing a wide range of professional materials; and undertaking and facilitating research about the region.

The center administers student exchange programs with the Catholic University of Bolivia and three Mexican universities—the Autonomous University of Guadalajara, the Autonomous University of Nuevo Leon, and the University of Sonora. Each spring several ASU students are selected to attend courses at the Latin American universities while Bolivian and Mexican students attend ASU.

Each year the center publishes several scholarly books as well as shorter monographs in its Special Studies Series.

The center is a member of the American Modern Language Association, the Consortium of U.S. Research Programs for Mexico, the Consortium for Latin American Studies Association, Pacific Coast Council on Latin American Studies, Rocky Mountain Council for Latin American Studies, Consortium of Latin American Studies Programs, and Conference on Latin American History.

The center directly encourages research, not only through its publications program and research conferences, but also through close coordination with the Latin American collection of Hayden Library and networking with Latin American universities.

For more information, contact the director, Center for Latin American Studies, SS 213, 602/965-5127.

Center for Meteorite Studies. One of the nation's largest collections of extraterrestrial materials is available for research in the Center for Meteorite Studies. Teaching and research on meteorites, meteorite craters, and related areas of space and planetary science are accomplished through the regular academic units in cooperation with the center.

For more information, contact the director, Center for Meteorite Studies, PS C151, 602/965-6511.

Center for Solid State Science. The Center for Solid State Science is a research unit within the College of Liberal Arts and Sciences.

The membership comprises faculty and academic professional researchers and research support personnel, many of whom also hold appointments in academic units. The Center for Solid State Science is the ASU focal point for interdisciplinary research on the properties and structures of condensed phases of matter. Current research topics include, among others, electronic materials, ceramics, composites, rare earth oxides, intercalation compounds, and ionic conductors.

Members of the center operate modern and sophisticated research facilities, organize regular research colloquia and symposia, and often collaborate with external researchers on projects of mutual interest. The most rapidly expanding topical research area in the center is the science and engineering of materials, with emphasis on the structure and reactivity of interfaces and surfaces, synthesis and processing of new materials, high resolution microstructural and chemical analysis, and research computing, consultation, and analysis with high speed computer graphics for physical modeling and visualization.

The Goldwater Materials Science Laboratories of the center include

1. the Materials Preparation Facility (MPF), which provides a wide range of synthesis and processing capabilities for preparation of specimen materials. MPF also provides thermal analysis for study of solid state reactions and Auger and X-ray photoelectron spectroscopy for analysis of surface compositions and electronic structure of surfaces;
2. the Materials Science Electron Microscopy Laboratory (MSEML), which provides state-of-the-art electron microscopes for analysis of microstructures, including imaging and diffraction, and high spatial resolution chemical analysis using energy dispersive X-ray and electron energy loss microspectroscopy;
3. the Ion Beam Analysis of Materials (IBeAM) Facility, which provides compositional and structural determination of the surface and near-surface regions (0–2mm) of solids by ion beam analysis where ele-

mental composition and depth distribution information are needed. Channeling experiments are used to determine crystal perfection and site occupancy;

4. the Facility for High Resolution Electron Microscopy (HREM) operates several ultra high resolution and ultra high vacuum electron microscopes and supports microscopy methods and instrumentation development including holography, position- and time-resolved nano-spectroscopy and energy-filtered imaging and diffraction. The center provides high resolution capability for a large external group from other universities and industry; and
5. the Secondary Ion Mass Spectrometry (SIMS) laboratory, which provides depth profile and point composition analysis with very high chemical sensitivity, on the order of one part per billion, including isotopic analysis for many materials. SIMS is also used as a chemical microscope, to image elemental distributions on specimen surfaces.

The Goldwater Materials Science Laboratories of the Center for Solid State Science are the primary teaching and research resources used by students in the Science and Engineering of Materials interdisciplinary Ph.D. program and the undergraduate option for Materials Synthesis and Processing. They are used for the same purposes by students from affiliated departments.

Special laboratories for other relevant research are available in affiliate departments. These include nuclear and electron resonance spectroscopy laboratories, X-ray diffraction and fluorescence laboratories, mechanical properties measurements capability over a wide range of temperatures, optical (laser) spectroscopy laboratories, and scanning tunneling and atomic force microscope laboratories.

For more information, contact the director, Center for Solid State Science, PSB 234, 602/965-4544.

Center for the Study of Early Events in Photosynthesis. This center, located in the College of Liberal Arts and Sciences, was established at ASU in 1988 as part of the USDA/DOE/NSF Plant Science Centers Program. The center serves as an infrastructure supporting ASU scientists who study pho-

tosynthesis using a variety of methods and approaches, ranging from molecular biology and biochemistry to organic chemistry, ultrafast laser spectroscopy, X-ray crystallography, and theoretical chemistry. It is designed to enhance undergraduate, graduate, and postdoctoral education through multidisciplinary cooperative research projects.

The ultimate objective of the research is the elucidation of the basic principles governing the biochemical and biophysical processes of photosynthetic energy storage. This goal is being realized via investigation of the early events of photosynthesis, including: light absorption and excitation transfer in photosynthetic antennas; the mechanism of primary photochemistry in plant and bacterial systems; secondary electron transfer processes; structure and assembly of photosynthetic antennas, reaction centers, and electron transfer proteins; pigment-protein interactions; artificial and biomimetic photosynthetic solar energy conversion systems; and mechanisms of biological electron transfer reactions.

The center is equipped with state-of-the-art instrumentation which allows students to do frontier research in a broad range of disciplines. Equipment includes a variety of pulsed lasers for measurements with time resolution ranging from sub-picoseconds to seconds; a 500 MHz NMR instrument; an EPR spectrometer; a protein X-ray facility; spectrophotometers; fluorometers; a protein sequencer; and an amino acid analyzer.

The center sponsors a weekly Photosynthesis Seminar Series and brings in visiting scientists from around the world to carry out collaborative research. Undergraduate, graduate and postdoctoral training programs in the Department of Chemistry and Biochemistry and the Department of Botany are central components of the activities of the center.

For more information, contact the director, Center for the Study of Early Events in Photosynthesis, PSD 207, 602/965-1963.

Exercise and Sport Research Institute. The Exercise and Sport Research Institute (ESRI) is an interdisciplinary research unit located in the Department of Exercise Science and Physical Education and serves, in part, as a research facility for the interdisciplinary doctoral program in exercise science.

The major research areas can be described as follows. *Biomechanics* applies the laws of physics to the study of human movement. It examines internal and external forces applied to the human body and the effects these forces have on the body. *Exercise physiology* studies the acute responses of the body to exercise and its chronic adaptations to training. It also studies the interrelationships among physical activity, performance, and health. *Exercise biochemistry* focuses on the study of subcellular systems involved in the provision and regulation of energy transfer during exercise. *Exercise endocrinology* studies interrelationships of exercise and training with stress, hormones, neurotransmitters, and the immune system. *Motor behavior and sport psychology* study human behavior in fundamental motor activity and sport. *Motor behavior* includes the subdomains of *motor learning, control, and development*. Motor learning focuses on skill acquisition, motor control studies how movement is regulated and controlled via the nervous system in normal and pathological populations, and motor development studies how growth and maturation affect performance and learning across the lifespan. Within the context of sport and exercise, *sport psychology* examines the influence of psychological variables on performance or health and the influence of participation on psychological phenomena.

The ESRI is affiliated with a number of medical institutions in the Phoenix area.

Faculty and graduate students at the ESRI are investigating a wide range of topics concerning human physical activity, including different ages, levels of health, levels of ability and fitness, and environments; and levels and types of training, body composition, nutrition, and physical and emotional stresses. Where applicable, these aspects are studied using an interdisciplinary approach.

For more information, contact the director, Exercise and Sport Research Institute, PEBE 159, 602/965-7473.

Hispanic Research Center. The Hispanic Research Center (HRC) at ASU is an interdisciplinary research unit within the College of Liberal Arts and Sciences. As a university-wide center, the main purpose of the HRC is to conduct basic and applied research on a broad range of topics related to His-

panic populations, to disseminate research findings to the academic community and the public, and to provide public service in areas of importance to Hispanics.

Research foci include Hispanic entrepreneurship, science and technology, the Hispanic polity, and the arts. Researchers and advanced graduate students throughout the university are encouraged to develop specific lines of inquiry under these four general areas. Ongoing activities of the HRC include the *Bilingual Review Press*, Hispanic Data Archives, the Electronic Publications Program, the Hispanic Research and Arts Network, and the Electronic Bulletin Board. In addition, the HRC supports the Community Documentation Program, which sponsors action research in community settings in collaboration with community-based organizations.

For more information, contact the director, Hispanic Research Center, CFS 104, 602/965-3990.

College of Public Programs

Morrison Institute for Public Policy. Established in 1981 by the Morrison family of Gilbert, Arizona, the Institute conducts research on public policy matters, informs policy makers and the public about issues of importance, and advises leaders on choices and actions. Morrison Institute offers a variety of services to public and private sector clients and pursues its own research agenda. Services include policy research and analysis, program evaluation, strategic planning, public policy forums, and support of citizen participation in public affairs. The institute's interests, research, and publications span such areas as education, urban growth, the environment, human services, workforce development, economic development, and arts and culture.

For more information, call 602/965-4525 or write

MORRISON INSTITUTE FOR PUBLIC
POLICY
ARIZONA STATE UNIVERSITY
PO Box 874405
TEMPE, AZ 85287-4405

Vice President for Research and Strategic Initiatives

Center for Environmental Studies.

Established in 1974, the center encourages and coordinates interdisciplinary environment-related activities in the natural and social sciences within the university.

Research programs within the center emphasize riparian and aquatic studies; wildlife biology; ecosystem and human impact studies; environmental regulation and policy issues; covering environmental risk assessment; hazardous materials; waste management; and studies relating to environmental problems on the U.S.-Mexico border. The center also organizes a variety of training programs for practitioners on current federal environmental regulations.

The center encourages communication among academic, government, and private sectors through research, workshops, seminars, and working papers. It manages the Sierra Ancha Research Station for the university. The station is located at an elevation of 5,000 feet

in the desert-pine forest transition. It offers research potential in biology, geology, anthropology, resource management, and nuclear engineering. Research space and living accommodations are also available for academic and research organizations.

For more information, contact the director, Center for Environmental Studies, Tempe Center (University and Mill), 602/965-2975.

CONSORTIUM FOR INSTRUCTIONAL INNOVATION

The Consortium for Instructional Innovation (CII) is a multidisciplinary unit committed to developing and supporting new pedagogical and technological approaches to teaching. CII uses a vast system of university resources to provide members of the university teaching community the opportunity to combine their talents and expertise with the latest technologies in producing beneficial new teaching methods.

CII combines existing teaching methods with technological options such as the use of computers, videotape, computer animation, and laser disks to create the best possible instructional methods.

CII offers assistance and financial aid to members of the teaching community who seek to develop projects in improving the quality of education at ASU. In evaluating proposals for curricular innovation, CII considers the applicability of projects to other areas and settings, the impact of projects on both students and faculty, and the commitment from the college or department in support of proposed programs.

In addition to developing teaching methods, CII periodically sponsors workshops and serves as a clearing house for information and referrals.

The units that make up CII are Computer and Network Consulting Services, University Libraries, University Media Systems, the University Program for Faculty Development, and the Writing across the Curriculum program.

