



Section 2

Academic Initiatives and Plans

This section focuses on the programmatic elements of the Budget Plan, describing the principal planning issues in the schools, major labs and institutes, and academic support areas.

GRADUATE SCHOOL OF BUSINESS

Over the next several years, the Stanford Graduate School of Business (GSB) plans to make significant breakthroughs in three major areas—teaching, research, and alumni involvement. For 2002/03, programmatic priorities include new research and curriculum enhancements, resources for alumni lifelong learning, and ongoing investments in technology infrastructure to support teaching, research, and business processes.

The proposed budget assumes the retention of key faculty, given the intense competition for outstanding scholars. Closely related are faculty-driven research and course development initiatives in entrepreneurship, e-business/e-commerce, human resources, and supply chain management. In addition, the school is substantially expanding its recently formed Center for Social Innovation, which will create innovative solutions to the problems of nonprofit organizations through research, teaching, and outreach. The School is also developing a new Center for Leadership. Finally, the GSB will continue efforts with Harvard Business School and other organizations to develop course modules and educational materials for electronically mediated delivery.

The proposed budget also supports innovations in the classroom, taking advantage of the small size of the MBA program. The GSB has developed a series of new, 12-person second-year seminars that examine faculty research. Other initiatives include project-focused and field-based learning and more international study trips.

Over the next several years, the GSB will redefine how a business school engages its alumni and involves them in the learning community. Of the many new initia-

tives, one of the most ambitious will focus on creating opportunities for alumni to tap into the school's knowledge base throughout their lives. Using technology and the Internet, the e-mediated learning initiative will foster stronger long-term ties with alumni by providing them access to the school's rich resources.

Technology investment will continue in 2002/03, supporting teaching, research, and business processes. Major investments include server support and help desk support; upgrades to the network and desktop; and implementation of an integrated web platform to support teaching, research, student services, alumni outreach, and business processes.

During the past year, the school completed a comprehensive study of its academic facilities with the goals of utilizing existing space more effectively, planning for mechanical system upgrades in the older, core GSB South Building, and improving classroom technologies. Capital improvements during 2001/02 included renovation of the Sloan Program classroom to support an increase in class size, technology upgrades for five classrooms, and upgrades to doctoral student workspace. The 2002/03 capital budget allows for reconfiguring portions of the Jackson Library to provide increased capacity for research initiatives, study group rooms, and career services.

SCHOOL OF EARTH SCIENCES

The School of Earth Sciences plans a variety of programmatic initiatives and faces several challenges. Two important issues affect the school's programmatic priorities. The first is faculty retirement. About a third of the school's faculty will reach age 65 by 2012. Replacement appointments offer an opportunity to forge new directions as well as renew core strengths. Recruiting new faculty will entail significant costs. The second issue is space. New programs, such as the Interdisciplinary Program in Environment & Resources and the Initiative on the Environment, demand space.

No new buildings are planned for Earth Sciences, so more efficient use of existing space, as well as storage facilities for research rock and mineral collections, will be needed.

The school plans to launch or further develop the following academic initiatives:

INTERDISCIPLINARY PROGRAM IN ENVIRONMENT & RESOURCES (IPER)—This recently approved program will offer an interdisciplinary Ph.D. and will also grant joint master's degrees with the Schools of Law and Business.

INITIATIVE ON THE ENVIRONMENT—This outgrowth of the Provost's Committee on the Environment will leverage and foster cooperation among existing programs on the environment in Earth Sciences, Engineering, Humanities & Sciences, Medicine, Law, and IIS.

EARTH SYSTEMS—This well-established interdisciplinary program has relied on foundation funding during its start-up phase. It now needs a more stable funding base.

COMPUTATIONAL GEOSCIENCES—The school plans to develop its strength in advanced modeling of crustal processes.

EARTHQUAKES AND VOLCANOES—Building on current strengths, the school plans to develop further its program in earthquake and volcano processes to create a world-leading group.

ADVANCED ANALYTICAL INSTRUMENTATION—The school needs to build endowment support to develop and maintain critical pieces of research instrumentation and shared facilities.

PLANETARY GEOLOGY AND ASTROBIOLOGY—Taking advantage of current linkages with SETI, NASA Ames, and the USGS, the school plans to develop a formal teaching and research program in planetary geology and astrobiology.

SCHOOL OF EDUCATION

Over the next year the School of Education will focus on three programmatic goals: (1) to increase the visibility of its work to improve education and communities for youth; (2) to expand its efforts in learning and technology; and (3) to review its academic programs and determine whether to restructure or eliminate some programs and whether to create others.

In addition to generating new knowledge and training educational researchers and leaders, the School of Education is committed to improving educational practice. Ranked as the number one School of Education in the country, the school is committed to improving the visibility of its research and school reform activities. It hopes to raise \$4 million to house the new Institute for school and Community Partnerships in the former Career Development Center building. Many projects involve collaboration with a broad community of educators and community leaders, supporting teachers, students, policy makers, and other professionals. A sampling includes the following:

POLICY ANALYSIS FOR CALIFORNIA—A cooperative effort with UC Berkeley's School of Education to provide analysis and assistance to state policy makers.

STANFORD CENTER ON ADOLESCENCE—A research center promoting interdisciplinary research related to adolescents.

CHARTER HIGH SCHOOL IN EAST PALO ALTO—A professional development school for Stanford's Teacher Education Program.

STANFORD INSTITUTE FOR HIGHER EDUCATION RESEARCH—A research center examining contemporary higher education planning and policy issues from a wide range of analytical perspectives.

CALIFORNIA SCHOOL REDESIGN NETWORK AND PERFORMANCE ASSESSMENT COLLABORATIVE—An initiative to serve practitioners throughout California by helping them design schools and by conducting research on small-school designs and outcomes.

JOHN GARDNER CENTER FOR YOUTH AND THEIR COMMUNITIES
A center inspired by the late John Gardner in which Stanford faculty and students work with community leaders to create communities that promote healthy youth development.

As technology has become an increasingly powerful tool for educators, the school has expanded its efforts in learning and technology. It offers a master's program in Learning, Design and Technology and will launch a new doctoral program, Learning Sciences and Technology Design, in fall 2002. The learning sciences are dedicated to the study and design of psychological, cultural, and technological processes that support learning. Another area of technology focus has been the Teacher Education Program. To keep pace with new opportunities for using technology to enhance

education, the school has invested resources to integrate technology into the curriculum and to offer technology training to students. To support its technology initiatives, the school has made a substantial investment in the infrastructure providing services and tools to its varied programs.

Over the next year the school will review its seven master's programs with the goal of restructuring or streamlining some of them. A co-term program in elementary education was just approved by the faculty and will be phased in over several years; in fall 2003 the program will begin accepting Stanford undergraduates in their junior year. Because the school intends to maintain the same overall number of graduate students, it will need to consolidate or possibly eliminate other programs.

Challenges facing the school include the recruitment of top faculty and students to the Bay Area, with its high cost of living; the expansion of research and professional development programs, given the limitations on space and infrastructure; and the growing demands for technology support.

SCHOOL OF ENGINEERING

A year ago, the School of Engineering was poised to begin several academic initiatives and to build required facilities. While changing economic realities have affected the speed with which the school is developing these programs and facilities, it continues to move toward its programmatic goals.

A school like Engineering, based on rapidly changing technology and new fields of inquiry, cannot stand still and remain a leader. It must continually renew itself to stay at the forefront of engineering and not risk its long-term future for what is, most likely, a short-term economic challenge.

The School of Engineering is strengthening its photonics program and has committed—with the School of Medicine—to create a joint department in bioengineering. Engineering is also embarking on ambitious collaborative efforts to focus on energy and the environment, and to develop shared facilities to reinvigorate Stanford's efforts in materials research.

The school must move quickly to ensure leadership positions in bioengineering, photonics, and energy and the environment. It must renew larger departments as faculty leaders retire and strengthen smaller departments where departures have weakened their

competitive position. Research laboratories and equipment must be continually renewed. Each of these objectives is critical and expensive. The school's challenge, during this period of constraints, is to identify expense reductions and revenue enhancements that will not jeopardize its academic programs.

The school has designed its budget reduction strategies to protect its academic programs and to allow continued investments in new initiatives. Engineering intends to meet its budget targets by reconfiguring its one-time equipment program, eliminating several staff positions, modifying budgets to reflect changed policies, and adding revenue from newly endowed sources. The school has also identified underutilized, school-controlled restricted funds that can support the operating budget.

The price of this combination of strategies is reduced flexibility and ability to move quickly on important new opportunities. While the school believes the risk of these budget-cutting strategies is tolerable for the short term, it must rebuild resources over the longer term to maintain and build on the strength of its programs.

HOOVER INSTITUTION

The community of Hoover scholars—typically from the disciplines of economics, history, law, and political science—strives to conceive and disseminate ideas defining a free society through institutional book projects, conferences, and forums. Hoover fellows also pursue individual research studies. Some of these focus on politics, economics, and political economy within nations; others focus on foreign policy, addressing international rivalries and global cooperation regarding security, trade and commerce, and the rule of law.

In 2002/03, the Hoover Institution will further develop nine research initiatives that embrace the principles defining its mission—individual, economic, and political freedom; private enterprise; and representative, yet limited, government.

Hoover's nine institutional initiatives are the following:

- Accountability of Government to Society
- American Individualism and Values
- American Public Education
- Capital Formation, Tax Policy, and Economic Growth
- End of Communism

- International Rivalries and Global Cooperation
- National Security
- Property Rights, the Rule of Law, and Economic Performance
- Transition to Democratic Capitalism

Special research emphasis on American public education will continue through Hoover's Koret Task Force on K–12 Education. In the wake of the September 11 terrorist attacks, the National Security initiative has taken on added importance and will be emphasized in the coming year. This initiative represents an ongoing effort of Hoover fellows, other scholars, practitioners, and government officials to examine specific issues relating to international security. The Property Rights, the Rule of Law, and Economic Performance initiative is intended to develop an overview of the importance of property rights to a free society. The goal is to produce a number of books written for a broad audience, conveying in lay terms important concepts heretofore treated in a somewhat academic and esoteric manner. A number of recently appointed fellows specialize in American Individualism and Values. In his mission statement, Herbert Hoover pronounced that the Institution should dedicate itself "to sustain[ing] for America the safeguards of the American way of life." Fellows working on this initiative will embark on an intellectual inquiry into "the American way of life" and its appropriate "safeguards."

With the reorganization of the Hoover Library and Archives and the Stanford University Libraries, Hoover will focus its collecting activities on its original mission: to gather archival and special collections and to serve as a repository for rare and unique materials. While the collecting efforts will encompass all aspects of political, economic, and social change in modern times, three priorities will be emphasized: the history of communism, transition to democracy and economic freedom, and cultural conflict, especially between the West and the Islamic movement.

Effort will also be directed toward improving access to the collections through the Internet; promoting research and publications based on archival material through financial and other support to scholars; and expanding the exhibits and outreach program. Preservation and outreach will be enhanced through digitization of selected collections, including two major acquisitions: the complete files and broadcast tapes of Radio Free Europe/Radio Liberty and the broadcast archives from

William F. Buckley Jr.'s *Firing Line*, which include all broadcast tapes, transcripts, and extensive research files.

Individual and institutional research results are disseminated through a variety of media, including institutional books and journals, weekly essays, television, events in Washington, D.C., and the Internet.

Given the current political climate in the nation's capital, as well as Hoover's increasing stature as an idea generator focusing on America's policy concerns, the Institution is increasing its presence in Washington by hosting and sponsoring a series of symposia and conferences. Recent events have focused on U.S. foreign policy and on national security, racial, and ethnic issues. In the coming year, symposia will address K–12 education and economic policy.

Periodicals have become one of the Institution's most valuable outreach tools and important vehicles for framing the debate on major public policy issues. Hoover will continue to publish its established print journals, *Hoover Digest*, *Education Next*, and *Policy Review*®. It is also launching an online journal, *China Leadership Monitor*. This journal will provide U.S. policymakers with assessments of the top leaders in China, the political and policy choices these leaders face, and the methods they are likely to pursue. Breaking new ground as an outreach vehicle, the online version will precede the print version of the journal, which is released quarterly.

Syndicated nationally by Knight Ridder/Tribune, Hoover's Weekly Essays series is distributed to more than four hundred subscriber newspapers throughout the country. The Weekly Essays—all authored by Hoover fellows—also appear in five national news and public policy journals with total readership of more than one million.

Uncommon Knowledge™, the Institution's weekly public affairs television series, will enter its eighth season of production in 2002/03. PBS stations across the country broadcast the full season of 39 original programs.

SCHOOL OF HUMANITIES & SCIENCES

Under the leadership of the Dean, a host of academic initiatives will be developed and implemented during 2002/03 by a team consisting of the school's cognizant deans.

Motivated and inspired by the Hewlett Foundation's \$300 million gift (of which \$150 million will be used

for matching funds), the school has embarked on a strategic planning process that will continue into the new academic year. Building on the Needs Assessment developed for the Provost during 2000/01, the dean has assembled a faculty advisory group and a small group of friends from outside the school who will work with the dean and cognizant deans to identify main themes and specific goals for development initiatives. A guiding principle will be that Hewlett matching funds will not be used directly to fund the school's structural budget deficit, but rather to flexibly support future-oriented program development and growth. The school seeks to imagine the Stanford of 2010 or 2020 and to design a plan that will bring this Stanford into being.

Construction of the Lokey Laboratory, a new research building to be used jointly by the departments of Chemistry and Biological Sciences, will enhance the natural sciences. The building is slated for completion in the autumn of 2003. One ongoing role of the natural sciences within H&S is to push the frontiers of technology and concept in terms not only of practical problems we can envision now, but also of ideas seemingly far from any present application. The Lokey Laboratory and other new laboratories in H&S will incubate innovations for future generations of researchers in science, medicine, and engineering.

Over the last two years, one of the school's most sustained efforts has been to create a new structure for the Division of Literatures, Cultures and Languages (DLCL). During 2002/03, a plan will be implemented that strengthens the Division by creating several new cross-department committees and providing new ways to support research and to recruit and support faculty working in languages not represented by full departments. The restructuring of departments represents a chance to re-form and reinvigorate a central group of scholarly endeavors within the school. The united DLCL will also be a major voice for Humanities within H&S.

The DLCL will join with faculty from the social sciences and natural sciences in another of the school's major initiatives: consideration of the world's diversity and the wide variety of issues both within and at the intersection of disciplines. Using Hewlett funds, a new umbrella program will be created that provides new levels of support for international, comparative, and area studies; incubates new regional or thematic programs; builds a framework in which comparative work can complement and enrich area work; and

provides support for departments as they consider new appointments.

SCHOOL OF LAW

The Law School's programmatic priorities, consistent with its strategic plan, are:

- to increase core faculty size from 40 to 45 to remain competitive with peer law schools in faculty recruitment and retention,
- to continue to improve obsolescent or inadequate physical infrastructure, and
- to strengthen its research and teaching programs in public law and policy, international law, environmental law, clinical law, and the empirical study of law.

Under current constraints, the school needs to postpone increases in faculty size and compensation and certain building projects, such as its proposed new information resources center and the concomitant recapture of office and meeting space from existing library space in Crown Quad. But the school is unable to postpone certain immediate needs, including deficits in legal research and writing, clinical education, minority student recruitment, and library modernization. The ABA and AALS reports issued after the school's septennial reaccreditation site visit last fall underscore the urgency of these needs.

Specifically, the Law School may not attain full reaccreditation unless it revamps research and writing programs to more heavily emphasize statutes, regulations, and fact gathering. It must increase the number of credit hours and move to a more professional staff of instructors. The school also needs to increase recruiting trips to the East Coast and bring out more students for visits, as peer schools do. Harvard and Yale have almost a 70% acceptance rate for African-American students; Stanford's acceptance rate is almost 30%. The school will also begin the process of reclassifying its library system. Until it does so, it will not be able to participate in any online databases or integrate with the university library system.

SCHOOL OF MEDICINE

During the past year, the School of Medicine has engaged in a comprehensive strategic planning effort to help chart its direction for the next decade and beyond. The school faces two critical challenges. The first is taking advantage of extraordinary opportunities emerging from bioscience and technology that have the

potential to change the face of medicine immeasurably in the immediate future. The second is addressing the equally extraordinary financial challenges faced by academic health centers owing to the negative impact of managed care and significant reductions in public support through Medicare and Medicaid. Accordingly, the school must thoughtfully consider strategic initiatives to optimize its future success.

Central to strategic planning is a clear understanding of mission and its relation to overarching goals and related initiatives. During this past year, the school has defined its mission as the following: *To be a premier research-intensive medical school that improves health through leadership and collaborative discoveries and innovations in patient care, education, and research.* Based on this, the school's overarching goal is to improve patient care through translational research and to enhance education and research through the close integration of basic and clinical science coupled with interdisciplinary collaborations.

The strategic planning process has addressed the significant program and facility changes that will be needed in the education and training of medical and graduate students and postdoctoral trainees to make Stanford a global model among research-intensive schools of medicine. The process has also addressed the direction of basic and clinical research programs, including the development of new interdisciplinary institutes that will facilitate translational research. In tandem, the process is addressing the scope of clinical programs and the size and composition of the faculty necessary to fulfill the school's missions. Under the leadership of a new Senior Associate Dean for Information Resources and Technology, the school will also intensively pursue ways to use information technology to improve education, research, and clinical programs.

This comprehensive agenda will require additional funding, which the school intends to raise through the Campaign for Stanford Medicine. Clearly, new initiatives will impact financial reserves and mandate not only strategic investments but also creation of new funding streams from public and private sources. This will require a robust and clear message, a clear communication strategy, a strong program in advocacy and government relations, and an ambitious capital campaign through the Stanford Medicine Leadership Council.

The school must monitor its progress carefully so that it can optimize success and manage its financial future.

To enhance these efforts, the Dean's office is creating new principles and policies regarding departmental and school reserves and the appropriate allocation of expenses between that office and the school's basic and clinical science departments. These new policies are expected to be aligned with overall strategic plans and initiatives.

The next several years will sharpen and refine programmatic directions and capital needs, especially for the construction of a Center for Learning and Information for Medical and Graduate Student Education. At the same time, over the next decade the school will face a number of capital demands driven by aging facilities and new opportunities emerging in bioscience, including exciting new interactions with the Schools of Engineering, Humanities & Sciences, and Earth Sciences. This will clearly be a time for careful planning and judicious investment as well as ambitious fundraising to bring the school's strategic vision to fruition.

DEAN OF RESEARCH

The Office of the Vice Provost and Dean of Research and Graduate Policy has several important functions: development and oversight of research policy; oversight of the independent laboratories, centers, and institutes; policy development for Stanford's graduate education program; and management of the Offices of Technology Licensing (OTL), Environmental Health and Safety (EH&S), and Research Compliance.

The Stanford Graduate Fellowship program now supports 375 outstanding graduate students in 36 fields in science, engineering, and the social sciences. Of the Stanford Graduate Fellows, 79 also earned nationally competitive fellowships and are honored as joint fellows.

The 10 independent laboratories, centers, and institutes reporting to the Dean of Research encourage and support Stanford's interdisciplinary research and scholarship and currently account for about 15% of Stanford's research volume. The program and budget plans developed by these units demonstrate that they provide strong programs that both complement and supplement Stanford's departmentally based research and scholarship, in addition to attracting excellent students and external scholars. One example is the Bio-X program for Bioengineering, Biomedicine and Biosciences at Stanford, an emerging collaboration of faculty in the Schools of Engineering, Medicine, and H&S.

The program will be housed in the new Clark Center for Biomedical Engineering and Sciences.

The budget also supports several administrative units.

- The mission of the OTL is to transfer Stanford technology for public use and benefit and to generate royalty income to support research and education. The OTL's success in technology transfer has allowed the establishment of 35 Stanford Graduate Fellowships, 10 of them in the current fiscal year.
- EH&S has established a stable program devoted to the continued support and welfare of the Stanford community and its research activities.
- The Research Compliance Office oversees seven administrative panels that assure the University's compliance with federal, state, and local regulation of research and teaching activities by reviewing those activities involving human subjects, laboratory animals, biohazardous agents, recombinant DNA, and radiological hazards.

VICE PROVOST FOR UNDERGRADUATE EDUCATION

The budget plan for 2002/03 enables the Vice Provost for Undergraduate Education (VPUE) to sustain Stanford's commitment to excellence in undergraduate education while limiting innovation to areas of highest priority. It identifies programmatic reductions that reduce total general funds expenditures for the VPUE by 5% and formalizes the reserve policy that has evolved from careful accounting and financial management practices over the past few years. Two developments have exacerbated the uncertainty in VPUE income projections for 2002/03: the unpredictable pace of receipts from the Campaign for Undergraduate Education and the loss in market value of the most recently created VPUE endowments.

During the 2001/02 academic year, the VPUE successfully implemented its long-term plans to expand the Undergraduate Research Programs (URPs). Thirty-one departments received funding, up from 20 in 2000/01. Sixty-six individual faculty members received grants to involve students in their own research, almost double the number of grants from the year before. URP participation by faculty with appointments in professional schools and research centers has reached an all-time high. In addition, the Summer Research College expanded its housing subsidy program to reach 280 students, more than double the number served last year.

These substantial investments underscore the close alignment of undergraduate education with the research mission of the University. Faculty members support student researchers at all stages of their intellectual development, from assistantships to collaboration to fully independent scholarship. An increasing number of student/faculty research partnerships have grown from mentoring relationships fostered by Stanford Introductory Seminars and Sophomore College.

In response to an overwhelming need for individualized attention to writing, the Stanford Writing Center opened in 2001/02. Professional writing instructors provided over 400 one-on-one tutorial sessions for first-year students during fall and winter quarters. Writing workshops sponsored by the Center reached hundreds of additional students in small-group sessions. The Center also provided a space for students to hold poetry and other readings, one of the highlights being a parent/student authors' panel during Parents' Weekend.

The Writing Center is one of several initiatives of the Program in Writing and Rhetoric (PWR). Foremost among these is the development of a new curriculum for the revised University Writing Requirement mandated by the Faculty Senate, effective in autumn 2003. The new requirement maintains the first-year writing and composition course with an emphasis on research skills. It ends Advanced Placement exemption and replaces it with an innovative course in oral and media communication, primarily for sophomores. To execute this innovative new curriculum, the VPUE has restructured the staffing configuration for PWR and instituted a national search for professional instructors who are leaders in the field of rhetoric and composition. Governed by a new Faculty Advisory Board, PWR is setting new standards for writing instruction and renewing the vitality and visibility of writing and oral communication activities across the campus.

In 2001/02, the VPUE achieved full implementation of an integrated academic technology model that serves both administrative and teaching needs. Academic Technology Specialists (ATSs) serve as a bridge between the academic and the technical, providing streamlined program administration as well as personalized consulting for faculty through the VPUE programs. This academic technology consulting is supported by a technical infrastructure closely coordinated with ATS needs. For example, for the new oral and media communication courses, the ATS helps professors

develop technology-assisted pedagogy; works with the program administrator on the design of the classrooms in which the course will be taught; and coordinates with the information technology group on the purchase of computers and equipment.

The VPUE budget plan for 2002/03 gives highest priority to expanding the number of faculty-student URP partnerships and to developing the curriculum for the University Writing and Rhetoric Requirement. Sustaining excellence through attention to administrative infrastructure and program assessment is a third priority.

Strategic expenditure reductions throughout the VPUE will lower its general funds expenditures by approximately 5%; reductions exceeding this amount will fund growth in the three priority areas (research, writing, and sustaining programmatic excellence). The main sources of reduction are Freshman Seminars, Sophomore College and Seminars, Course Development Assistants, and Undergraduate Advising. The Sophomore College reduction implements programmatic improvements suggested by past years' evaluations. The size of the College (29 classes or 348 students in 2001/02) had been identified as impeding the creation of scholarly community among all the students. The 2002/03 budget supports 24 classes (288 students); Sophomore College will also, for the first time, charge a nominal fee (\$400; financial aid is available). Other VPUE reductions (e.g., in the number of Course Development Assistants for faculty) will align resources more closely with actual use after several years of operation. Belt tightening across the spectrum of VPUE programs will achieve additional savings.

The mission of the VPUE is to promote undergraduate education by building partnerships with faculty, departments, programs, and schools across the university. The 2002/03 budget enables the VPUE to carry out this complex and vital mission through careful and efficient management of its programs and services.

STANFORD UNIVERSITY LIBRARIES AND ACADEMIC INFORMATION RESOURCES

SUL/AIR's principal components are the libraries, Academic Computing, and HighWire Press, which provides Internet publishing services to scholarly publishers. A major emphasis in 2002/03 will be devising projects and programs that increase the synergy between the libraries and Academic Computing,

while adopting and adapting features and functions initiated by HighWire Press for a highly controlled environment consisting mainly of e-journals.

SUL/AIR's information resources and services are in considerable demand. In particular, the Information Center—the first stop for many undergraduates preparing papers in the humanities and social sciences—and the reference desks in school and department libraries are receiving ever more requests for assistance. SUL/AIR's bibliographic instruction sessions for about 100 courses per quarter continue unabated, but there are also numerous requests for impromptu instruction as students suddenly realize that they do not really know how to exploit Stanford's vast physical and virtual collections. Despite growth in virtual collections of reference works, e-journals, abstracting and indexing databases, digitized classics of literature, and lately e-books, students continue to draw heavily on traditional collections. SUL/AIR's special collections continue to interest graduate students, and a few seminars draw undergraduates to such collections as the R. Buckminster Fuller Archive, the university's holdings in the history of Silicon Valley, and the wide array of source materials on the history of California.

Academic Computing services, including the seemingly indefatigable Residential Computing staff, have been deluged with users of the many clusters, the conversion labs, and the training programs on common applications. Subject specialists are busy selecting new materials for Stanford, always looking out for unusual items and collections to help make study and research at Stanford distinctively different and better. The superbly efficient technical processing staff, simultaneously working and re-engineering their work, have found ways to reduce dramatically the processing time for most items and to focus their considerable expertise on less common titles needing special handling.

Having contributed to the 2001/02 manifestation of the Stanford portal, SUL/AIR staff will be working to use portal technology to improve clients' access to information and meta-information. Consistent with last year's theme of providing clear and intuitive access to information, in 2002/03 SUL/AIR will attempt to incorporate the alerting features devised and implemented by HighWire Press into SUL/AIR's broader and more diverse information array. SUL/AIR is also attempting to bring readers new graphical user interfaces offering additional modes of navigation in the complex Stanford academic information environment.

With the approval of the administrative and physical realignment of the Hoover Library, much effort is being devoted to integrating collection development programs and technical processing regimes. Already, experienced SUL/AIR staff and newcomers from Hoover are narrowing gaps and making seams invisible. The East Asia Library staff and collections will be moved in the first months of 2002/03; other collections will follow. And newly joined programs are being tuned to better serve Stanford academic programs based on this more powerful combination of staff talents.

CourseWork is a course management software application newly released in 2001/02 by Academic Computing. It is Stanford's contribution to the Open Knowledge Initiative, in which MIT and Stanford are taking the lead for a small consortium of like-minded institutions. Already it has achieved impressive acceptance by about 300 Stanford faculty and over 6,000 students. In 2002/03, existing CourseWork modules will be improved and new modules written. In addition, application interfaces are being written to allow CourseWork to exchange information in predictable and authorized ways with the newly launched Stanford administrative systems. Authorized persons will send course registrants' information, test results, and final grades between CourseWork and the Registrar's records.

SUL/AIR's digital library program will take a major leap forward in 2002/03 as breakthrough technology acquired from a Swiss robotics firm enables a substantial increase in the quantity of texts digitized. SUL/AIR is establishing a production digitization lab to serve the many faculty who request digital versions for their own research and to experiment with the retrospective conversion of large backsets of long-running journals. SUL/AIR's conservation department staff will oversee the setup of this new lab to minimize the chance of damage to fragile and rare books. SUL/AIR will also treat some heavily used material in the University Archive to increase access to the content while reducing wear and tear on the originals.

SUL/AIR is expanding the range of digital books and serials available 24/7 to the Stanford community. Through some strategic alliances, new books and new functions will assist in searching and interpreting all of our digital resources.

Stanford Auxiliary Library III, which was expected to be ready for occupancy in September 2002, was delayed. Construction is now expected to proceed quickly on

newly acquired land in Livermore, California. Much of 2002/03 will be spent defining principles of collection deployment for the next five to ten years; the Academic Senate Committee on Libraries will review and approve these principles. SUL/AIR technical processing staff will fine-tune methods of identifying and describing the non-browseable collections to be housed first in the remote storage facility.

Several digital preservation initiatives are also under way. The media preservation group of the conservation department is fully staffed and equipped. It is now modeling methods that will eventually be scaled to appropriate size, given appropriate funding. The Dark Cave offline digital archive will accept its first large masses of digital content from a variety of publishers. The development team for LOCKSS (an effort to provide multiple copies of digital archive material), with support from outside foundations, corporations, and government programs, will adopt a new architecture and rewrite many of its components.

STANFORD LINEAR ACCELERATOR

Although the overall 2002/03 budget for SLAC, as contained in the Department of Energy (DOE) budget submitted to Congress by the President, is nearly flat, the SLAC synchrotron radiation program fares better than its high energy physics program. An incremental budget request of \$11 million for high energy physics has been submitted to the DOE, but the SLAC 2002/03 budget will not be known until late summer, after congressional actions are completed. Nevertheless, SLAC looks forward to an exciting year for its scientific programs.

High Energy Physics Program

The PEP-II/BaBar B Factory has been a great success. The BaBar collaboration (600 physicists from nine countries) made the first definitive measurement of CP Violation in the B meson system in 2001. Additional physics data will improve the precision of the measurement. In 2002/03, a nine-month run is planned, and an accelerator improvement program is under way to increase the PEP-II luminosity again. The luminosity is expected to triple in 2003. Upgrades to the BaBar detector are also in progress to keep up with the increasing luminosity. Continual investment in computing resources is needed to handle the increasing volume of data.

SLAC continues to lead an extensive international R&D effort aimed at the eventual construction of a high-energy, high-luminosity, electron-positron linear collider for unique experimental investigations at the TeV energy scale. In January 2002, the DOE/NSF High Energy Physics Advisory Panel recommended that the highest priority of the U.S. high-energy physics program be a linear collider, wherever it is built in the world. The Next Linear Collider (NLC) R&D program at SLAC is being carried out in close collaboration with Japan's National Laboratory for High Energy Physics and other DOE National Laboratories (FNAL, LBNL, and LLNL). The NLC R&D program has made significant progress but has been severely constrained by flat funding in recent years.

In the particle astrophysics area, the DOE and National Aeronautics and Space Administration (NASA) are jointly funding the Large Area Telescope (LAT) investigation on the Gamma-Ray Large Area Space Telescope (GLAST) mission. The LAT project is an international collaborative effort of the Stanford team (SLAC, Physics Department, and HEPL) with other U.S. and European institutions. The fabrication of the instrument is under way, targeted to meet the launch schedule of 2006.

The fixed-target program at End Station A (ESA) employs SLAC's capability, unique worldwide, of a high-energy polarized beam. The ESA experiments operate in parallel with the PEP-II B Factory for a couple of

months each year. At a modest cost increment, the ESA program significantly increases the output of the high energy physics program. The Moller scattering experiment, which will measure the electroweak mixing angle with high precision, is taking data in 2002. A second data run is planned for 2003 under the requested budget.

Synchrotron Radiation Program

DOE and the National Institutes of Health (NIH) jointly fund the SPEAR3 project to upgrade the synchrotron radiation facility, SPEAR. A parallel multi-year program will upgrade the SPEAR beam lines to utilize the increased beam power available with SPEAR3. In 2002/03, SPEAR will operate for six months, after which its components will be upgraded with the new SPEAR3 ring. SPEAR3 operation is planned to begin, after a few months of commissioning, some time in 2003/04.

Plans are under way for the construction of an x-ray free-electron laser called the Linac Coherent Light Source (LCLS), which utilizes the last third of the linear accelerator. SLAC will lead the collaborative effort with two other DOE national laboratories (ANL and LLNL). The conceptual design report for the facility has been completed. The President's 2003 budget includes \$6 million in funding to begin design of the facility. The estimated cost of the facility is about \$220 million, and the current plan is to begin the three-year construction phase in 2006.