

STANFORD UNIVERSITY
BUDGET PLAN
2005/06

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SECTION 2

ACADEMIC INITIATIVES AND PLANS

This section focuses on the programmatic elements of the budget plan, describing the principal planning issues in the academic areas of the university.

GRADUATE SCHOOL OF BUSINESS

With an accreditation review recently completed, the Graduate School of Business (GSB) has expanded its list of areas under review and development. The issues identified by the accreditation review team included faculty development, morale, and compensation; declining focus on academics in the MBA Program (common to all business schools, not just Stanford); lack of differentiation of the school's centers from those of other leading schools; an insufficiently global focus; and the need for facilities improvements. They also spoke about the new Stanford-wide initiatives to address world problems and to reform graduate education as involving both wonderful opportunities and scary possibilities for the GSB.

Continuing issues for the school include the following:

- An increase in competition for both top faculty and top students,
- A decline in open-enrollment executive education attendance, along with an increase in the number of such programs offered elsewhere,
- Pressure to offer student services comparable to those at peer institutions,
- The need to continue to invest heavily in existing and new alumni programs, due to the school's high degree of dependence on alumni support.

The GSB also faces the challenge of coordinating with the rest of the university on the upcoming fundraising campaign, given the large number of GSB alumni who have developed broad interests at the university.

Addressing all of these issues will certainly provide the GSB with great challenges during 2005/06.

GSB Mission

The mission of the GSB is to create ideas that advance and deepen the understanding of management, and with these ideas, develop innovative, principled, and insightful leaders who change the world. The school has identified four general management mindsets for students to learn and to use: leadership, entrepreneurship, global awareness, and social accountability.

Leadership means taking full responsibility for changing an organization for the better. To develop this skill, students must understand their own strengths and weaknesses, and learn how to motivate and inspire others. Entrepreneurship can mean starting a business; it also means acting with the perspective of an owner of a business, whether you are managing it, advising it, or investing in it. Global awareness means knowing what it takes to be a world-class organization, and how to build one that spans multiple countries, cultures, and economic or political systems. Finally, social accountability means being aware that businesses are not only economic institutions but also social institutions with responsibilities that extend beyond financial considerations. To be profitable in the long term, businesses and their leaders must continue to earn the trust and confidence of society.

GSB Centers

The four established research centers (Center for Entrepreneurial Studies, Center for Social Innovation, Center for Leadership Development and Research, and the Center for Global Business and the Economy) help to study and teach these mindsets. They also provide ways for faculty, students, and the community to come together around a particular area of faculty interest. GSB faculty use these centers to fund research, develop new cases and courses, collaborate with Stanford faculty outside of the GSB, and involve the communities who are interested in the work of the centers. The school believes its relatively small size will lead to better execution in the centers, which will ultimately differentiate its efforts from those of its peer institutions.

Curriculum

The GSB has developed a number of seminars in recent years. Often these have small enrollments that include students from other schools at Stanford. Practitioners and tenured faculty often teach together, with students generating much of the course content and engaging in project work. These seminars have proven to be very popular with both students and faculty, providing highly rewarding teaching and learning experiences. Despite the relatively high expenses due to the very low student-faculty ratios, the GSB is planning to significantly expand the number of these seminars. The school believes this will help counteract the trend away from academics and will broaden and strengthen the ties between the GSB and other schools on campus.

The Leadership Development Platform (LDP) helps MBA students to improve their leadership skills through experiential learning. It has concluded its second year quite successfully and will be expanded again next year to include more students.

Faculty

Many of the new programs and innovations currently under way at the GSB, including the centers, the small seminars, and the LDP, require additional faculty. The issues identified by the accrediting committee related to faculty include the need to better mentor junior faculty, the likelihood that GSB salaries are not competitive (especially in certain fields), and the greater movement among senior faculty. Identifying solutions to these issues will be an important focus for the dean's office this year.

Global Focus

The GSB has started, and will continue, to increase its global outreach efforts. During 2004 and early 2005, the GSB held events with faculty in China, India, and Europe. Visits were made to over twenty overseas cities for admissions, and the Career Management Center visited Europe, South America, and Asia to find companies where GSB graduates could work. The objectives of this outreach are to make courses more global, to attract more international students, and to find more international employers for GSB graduates.

Alumni Services

The first ever back-to-school executive education exclusively for alumni was held this past year, and there are plans to expand this program in 2005/06. Judging from the first year's results, the program is expected

to engage over 1,000 alumni each year and to be very successful in reconnecting alumni with the intellectual life of the GSB.

Executive Education

Results have been mixed for the executive education offerings, which face tremendous competitive pressures. Several custom clients have completed their programs and have not yet been replaced. Open-enrollment programs generally continue to suffer from a decline in international participation due to worldwide tensions and security concerns. Increased marketing will try to keep this important part of the school as strong as possible. The new Summer Institute for students completing their junior or senior year in college continues to be quite popular.

Coordination with the Rest of Stanford

Stanford has recently initiated efforts to address key global issues such as the environment, human health, prosperity, and security. As new discoveries are made and policies created, managed institutions will play a central role in their successful application. As the place at Stanford that studies organizational effectiveness, the GSB will help develop potential approaches and solutions to some of these important problems and challenges.

SCHOOL OF EARTH SCIENCES

During 2003/04 the School of Earth Sciences undertook a strategic planning process. A clear vision for the school emerged:

As a world leader in earth and environmental sciences and engineering, the School of Earth Sciences will create, integrate, and transform fundamental understanding of earth processes, and use that knowledge to help provide energy, water, and a safe and sustainable planet.

The strategic plan for achieving this vision includes a series of goals ranging from new approaches to faculty recruiting to improved support for analytical and computational laboratories. The focus in 2004/05 was on beginning to implement the plan. This process will continue in 2005/06, focusing on several major areas.

Educational Initiatives

The school has requested approval to establish a new graduate Interdepartmental Program (IDP). The proposed IDP in Earth, Energy, and Environmental Sciences is the response to a clear statement of need

articulated by faculty in the strategic plan. Currently, graduate students who wish to pursue research in emerging areas of earth sciences and engineering must work within traditional departmental structures that are not always well suited to their needs. The departments often expect completion of specific disciplinary requirements that are critical to the discipline, but not germane to a more multidisciplinary focus. These students will benefit greatly from a more flexible set of requirements that will allow them to build a strong program of study by drawing on faculty and educational resources from across the school.

This new program will pair nicely with another graduate IDP, the Interdisciplinary Graduate Program in Environment and Resources (IPER), established in 2002. IPER is a “far-field” interdisciplinary Ph.D. program combining the biophysical and social sciences with law and policy. In contrast, the newly proposed program will train graduate students who can integrate knowledge from earth sciences and engineering disciplines to address cross-disciplinary questions related to the earth’s resources and to the dynamics of the integrated physical, chemical, and biological components of the earth system. Like those in IPER, however, students in the new IDP will experience the rewards of being part of a cohort of young scientists exploring cross-disciplinary frontiers.

The school has begun an evaluation of its undergraduate programs. There is already broad consensus around the desire to grow these programs. One possibility is to transform the current Department of Geological and Environmental Sciences program into an Earth and Environmental Sciences program, with possible tracks in geology, geohydrology, geophysics, environmental earth sciences, modeling and simulation, energy resources, oceans, and remote sensing. Another possibility is to create a schoolwide IDP major with various tracks. Over the next academic year, there will be much more discussion of these alternatives, culminating in a recommendation from the undergraduate programs committee.

Research Initiatives

The school is creating a multidisciplinary center for computational research on energy, the earth system, and the environment. The Center for Computational Earth and Environmental Sciences will focus on the development of integrated models and tools for use by faculty throughout Stanford and colleagues at the U.S.

Geological Survey, Department of Energy laboratories, and Carnegie Institution. This will foster interdisciplinary cooperation enabling the sharing of common earth “views” and the building of shared earth models.

In many parts of the world, finding and maintaining clean sources of water for human consumption and agricultural use is increasingly challenging. Growing populations, coupled with declining water quality, have led to increased dependence on groundwater as a primary source of potable water in both developing and developed countries. The Groundwater Evaluation and Management Center (GEM Center) was developed to focus on groundwater problems. In addition to serving as a research center, the GEM Center will educate both undergraduate and graduate students, preparing them to take leadership roles in their home communities.

Energy research and teaching is a major focus for the School of Earth Sciences. Traditional areas of energy research are stronger than ever, and work is extending into new and rapidly expanding areas such as CO₂ sequestration, coalbed methane, and geothermal. New classes integrate geology, geophysics, and petroleum engineering. As a result of this trend, graduates are uniquely broad in their training and are aggressively recruited by industry.

Faculty Recruiting

The school has adopted a recruiting system that allows all its component parts (departments, programs, centers, and interdisciplinary teams) to identify priority needs and have a voice in the discussion about new hires. The goal is to have a school-wide picture of the kinds of positions the school hopes to bring in over a rolling three-to-four-year period, with annual (or more frequent) opportunities to modify that picture based on new opportunities, changing needs and foci, and surprises in science and teaching.

Analytical Facilities and IT Support

No growth is planned for the school’s physical plant, yet faculty numbers and programs are growing, and evolving priorities will require new kinds of space, particularly lab configurations. Lab space must be used more efficiently. With the help of the university’s Office of Capital Planning and a lab planning consultant, the school is assessing its lab facilities. The goal will be to provide the best possible research labs, to be shared whenever possible—a functional approach that facilitates coordination, cooperation, and collaboration.

Faculty and students have agreed for some time that technical support for labs is chronically inadequate. Technical support to help graduate students, ensure safety, facilitate the sharing of equipment, and generally maintain labs is almost nonexistent. As the school moves forward with shared lab facilities, it becomes more critical than ever that labs be well maintained and managed. The school expects that, once the plan for shared labs is fully implemented, it will need seven full-time lab technicians—an increase of five FTEs. In addition to potentially increasing the productivity of students and faculty, this institutional commitment to state-of-the-art scientific research facilities will help the school's competitive standing with federal funding agencies.

Communication and Outreach

Another result of the strategic planning process was a communications plan, including the appointment of a director of communications.

The school has recently recruited an outreach coordinator to work on educational outreach activities, such as developing curricula for use in K–12 classrooms, running workshops for teachers, and creating online tools. This individual will serve as a resource for faculty as they develop research proposals, as well as for students interested in gaining teaching experience.

SCHOOL OF EDUCATION

The School of Education has multiple, but integrated, missions: to generate new knowledge; to train educational researchers and leaders; to improve educational practice; and to influence educational policy. Over the next year the School of Education will focus on three programmatic goals: (1) to make existing academic programs more efficient and effective; (2) to expand its efforts in the area of learning and technology and leadership; and (3) to plan a new charter school in East Palo Alto. The following information gives a snapshot of some current initiatives.

With a \$500,000 gift from an individual donor, the school has launched the Center for Educational Leadership. The center will serve as an umbrella for degree and professional development programs with a significant education leadership component, including some that are connected to the GSB. The goal of the center is to improve education through interdisciplinary activities related to the development of leadership capacity. The center will focus on educational leadership in a broad

set of contexts that affect student learning outcomes, including school districts, government agencies, unions, nonprofit organizations, and foundations. To accomplish its objectives, the center will (1) launch and support professional development programs for educational leaders; (2) develop synergies between existing School of Education degree and non-degree programs; and (3) support and disseminate interdisciplinary research to inform the training of educational leaders and the practice of leadership.

To address the literacy crisis in local schools, two faculty members, in collaboration with the Haas Center for Public Service, created the Ravenswood Tutors Program. Recent scholarship and practice demonstrate that one-on-one tutoring with well-trained, supported, and supervised tutors is one of the best interventions available. The Ravenswood Tutors Program combines the expert knowledge of the School of Education faculty with Stanford student tutors to help address the language and literacy needs of students in the district. Ravenswood English is designed to foster English language acquisition and promote a love of reading in children who currently have little or no knowledge of English. Ravenswood Reads is designed to help all children learn to read English. The assessment and evaluation component of the program serves to advance research on how particular types of tutoring programs enhance the reading skills of young children.

In the fall of 2005, the first class of students will be admitted to the new Elementary Teacher Education Program. The program's mission is to cultivate teacher leaders who share a set of core values that include commitment to social justice, understanding of the strengths and needs of a diverse student population, and dedication to equity and excellence for all students. The program takes an approach to teaching and learning that addresses the family, community, and political contexts of education, while being grounded in the study of subject matter that enables inquiry, critical thinking, and problem solving. As in the secondary teacher credential program, partnerships are being established with several local professional development schools, where both new and experienced teachers can experiment with innovative instruction and evaluate new learning approaches, programs, and technologies.

The Carnegie Foundation supported "Teachers for a New Era" initiative is expanding the involvement of the Schools of Humanities and Sciences, Earth Sciences, and Engineering faculty in teacher training at Stanford.

Ultimately the goal is to enhance the visibility of and support for teacher education in universities, and to develop a model of effective teacher preparation.

The Gardner Center for Youth and their Communities will launch a new Youth Data Archive that will help public and private organizations serving young people devise more effective programs and policies. Currently, although many groups serve the same clients, there is little information on how much they overlap, where gaps exist, and what strategies work most effectively. To address the lack of coordination and focus among various youth-serving organizations, the archive will link data from multiple sources and create information essential to coordinating and strengthening support for youth in the community.

The Center for Performance Assessment is a member of the Performance Assessment for California Teachers (PACT) consortium of teacher preparation programs at a number of California universities. These institutions have joined together to develop a portfolio assessment for improving teaching and teacher education. Successful completion of the teaching performance assessment will be required to earn a California Preliminary Multiple Subject or Single Subject Teaching Credential. In its two years of existence, the PACT consortium has developed a set of rigorous and technically defensible teaching performance assessments and disseminated best practices across its members.

The Stanford School Redesign Network has developed resources to support new school startups and districts that attempt to convert large high schools to smaller schools or small learning communities. It has also developed support networks designed to promote collaboration, mutual problem solving, and sharing of materials and best practices. The network conducts research and evaluations that document both the challenges and the opportunities of redesign, noting best and promising practices with respect to school conversions and effective small schools. The next phase of the work will seek to influence public policy on school redesign by conducting analysis and developing briefs and forums addressing key programmatic or policy issues.

Construction of the new Barnum Family Center for School and Community Partnerships begins in June 2005, with occupancy scheduled for the following summer. The historic old bookstore will be renovated and a new addition will replace an addition dating from the 1970s. The building will increase visibility for part-

nership programs with practitioners and community leaders, and will serve as headquarters for both school redesign efforts and the Gardner Center.

Faculty recruitment continues to be a major activity, and the school expects to engage in seven active searches over the coming year. Extensive effort and planning go into designing each faculty position as the school expands into new areas to keep up with current issues in education. The domains of inquiry include teaching and learning, preschool through adulthood; contexts for learning, including schools, families, and communities; education policy (local, state, and national); international comparison and analysis; and technology.

A major initiative for the coming year will be planning the new K–12 Charter School in East Palo Alto. Grades K through 8 will be added to the existing East Palo Alto High School, which the School of Education has been co-managing with a charter school organization, Aspire. Assuming that the charter petition is approved by the state, the new school will function as a site for professional development for teachers presently working in Ravenswood city schools, as well as students enrolled in the elementary and secondary certification programs at the School of Education. It will also serve as a site for developing innovative, evidence-based practices capable of advancing student learning and affecting urban students more generally over time.

SCHOOL OF ENGINEERING

The School of Engineering remains a world leader in engineering research and education. Initiatives in support of this mission continue to be both inter- and multidisciplinary. The school believes that these academic plans have the potential both to create technologies and engineering leaders for the future and to improve the human condition.

Department of Bioengineering

The new Bioengineering Department is by all measures a great success and is rapidly growing. A year ago the university granted permission for Bioengineering to award graduate degrees. The department is now admitting its second class of graduate students, and again the pool is large and very strong. A Biomedical Information Science and Technology Initiative training grant was awarded in October providing several years of financial support for graduate Bioengineering students. There have also been some very significant successes in gaining research contracts to support

faculty, staff, and students in the department. Three exceptional new faculty have also been recruited and have started this year.

Led by Bioengineering faculty, researchers and students will take on the health issues that affect all of us. This will be done at both the micro and the macro levels. Using a foundation of quantitative biology, their work will include biomedical devices, imaging, drug delivery systems, and regenerative medicine. It is their vision that engineered solutions can profoundly affect human health.

Design Institute

The new Design Institute focuses on educational programs that blend engineering innovation, human values, and business and manufacturing concerns into a single curriculum. The school envisions this as a true interdisciplinary program that includes design methodology, the techniques of rapid prototyping to prove feasibility, and design through understanding of user needs, and intends that it will quickly be incorporated into all discipline-based engineering curricula. There is tremendous excitement about this initiative not only within the engineering school, but also in other parts of the university that will be affected. The design teams, a focus of this initiative, will include students from business, the humanities, medicine, and many other areas.

The financial support required for this new initiative is substantial. The school will need to completely renovate Building 550 on the Panama Mall and equip it for its new function as the home of the Design Institute. Since the project-based learning style of the institute will require significant staff and faculty support, the school also needs a substantial endowment to support these ongoing expenses. These financial needs have been largely met through a recent pledge. School reserves will also provide funding for this initiative.

Institute for Computational and Mathematical Engineering (ICME)

ICME is a new interdisciplinary program in computational mathematics. ICME's central research mission is the development of sophisticated algorithmic and mathematical tools, which affect many different applied disciplines in engineering, earth sciences, medicine, and applied science. ICME's teaching mission is to develop a core set of undergraduate and graduate courses to serve students throughout the School of Engineering

and beyond. Last fall the university approved ICME's Masters and Ph.D. degree-granting ability, and it already offers both undergraduate and graduate courses in numerical methods and applied mathematics. It also provides a strong core set of advanced courses for students enrolled in its Masters and Ph.D. programs.

Architectural Design Program

In fall 2004, the undergraduate architectural design program moved from Urban Studies in the School of Humanities and Sciences to the Department of Civil and Environmental Engineering. In addition, an option for a concentration of architectural courses in civil engineering is offered. The program is cutting edge, with course offerings in architecture and building design emphasizing sustainability, green design, life-cycle planning, and design/construction integration.

The Architectural Design Program provides a wonderful synergy with the school's commitment to the Institute for Energy and Environment and is an outstanding opportunity for civil and environmental engineering students desiring more exposure to studio design.

Energy and the Environment

The Institute for the Environment and new energy technologies remain very high on the school's list of academic initiatives. Several new faculty searches have been launched in these general areas within the past year by reallocation of existing billets. Alternative energy sources, sustainable buildings, and new materials will be some of the challenges that faculty, researchers, and students investigate.

This initiative, which is supported by the Schools of Earth Sciences, Humanities and Sciences, and Law, along with the GSB, has received very strong student interest. Strong involvement and leadership by the Civil and Environmental Engineering Department will ensure its success.

Research Experiences for Undergraduates

The school has piloted a program for the past five years that provides the opportunity for engineering undergraduates to spend a summer working in a faculty research lab. Research Experience for Undergraduates has been very effective in giving students an early and exciting view of engineering as a career. Last summer more than 120 undergraduates in five departments participated in this program. A donation has been made to endow the program and make it accessible to

approximately 200 engineering undergraduates each summer. This makes it possible for every interested engineering undergraduate to participate in the program at least once during his or her undergraduate career.

Nanotechnology

The school has, over the years, invested many resources in nanotechnology. In partnership with the National Science Foundation, the Stanford Nanofabrication Facility has, for a decade, been building collaborations around nanotechnology. In collaboration with the Dean of Research, the School of Engineering will soon build a new nanocharacterization facility. These initiatives will ensure that Stanford will remain a leader in the field.

SCHOOL OF HUMANITIES AND SCIENCES

The School of Humanities and Sciences (H&S) strengthened its faculty with forty-seven new arrivals across its twenty-eight academic departments in autumn 2004, and carried out a total of sixty-seven searches during the 2004/05 academic year. Projection of the full costs of recruitment (including salary, program support, and any required facilities renovations for new hires) resulted in a readjustment of faculty hiring plans for 2005/06, with a deferral of twenty-nine originally planned searches. The school projects approval of a modest number of searches to be carried out in 2005/06, with return to a typical search number at the traditional replacement rate for the subsequent year. Another area of adjustment during 2004/05 was in graduate admissions for autumn 2005. Following a higher-than-average yield of outstanding graduate students entering Ph.D. programs in the previous two years, H&S imposed lower admissions targets for 2005 arrivals, in order to bring the balance back for autumn 2006 arrivals.

Significant milestones occurred in the development of several H&S programs in 2004/05, including the construction of new or renovated facilities that will house them.

- The Institute for Research in the Social Sciences (IRiSS) hosted its inaugural conference, “The 2004 American Presidential Election: Voter Decision-Making in a Complex World” just one week after the November 2004 elections. The all-day conference featured some of the nation’s leading analysts commenting on the outcome and implications of the election. A second major conference sponsored by IRiSS took place in spring 2005; the “Conference

on Inequality” featured related sessions on criminal justice, health policy, social security, race, and gender. The mission of IRiSS is to foster and strengthen multidisciplinary research in the social sciences, enabling Stanford scholars and their collaborators to address significant challenges confronting society.

- The new Kavli Institute for Particle Astrophysics and Cosmology, founded in 2002 as a joint multidisciplinary initiative between H&S, the Dean of Research, and SLAC, sponsored its first major conference in 2004, the “22nd Texas Symposium on Relativistic Astrophysics.” Talks emphasized recent developments in cosmology, high-energy astrophysics, and the frontiers between these and gravitation and particle physics.
- Stanford’s Institute for Research on Women and Gender, which moved into the School of Humanities and Sciences in 2001, enjoyed a year of renewal and renaissance in 2004/05. Founded in 1974, the institute is one of the nation’s oldest and most pre-eminent research organizations devoted to the study of women and gender, with two primary objectives: to reevaluate gender roles in universities, corporations, and society at large, and to conduct in-depth research on gender in the world of ideas, politics, and people’s everyday lives. The institute’s new focus is to establish a research fellowship program that initially will focus on gender in science, engineering, and technology, later moving on to the arts, humanities, business, law, and medicine. The institute’s “Difficult Dialogs” series aims to provide media, policymakers, scholars, and the public with a deeper understanding of issues related to gender and ethnicity. The current forum topic, “Dual Career Couples,” began in 2005 and will run through 2007.

On the facilities side, several developments occurred this year that will enhance the H&S program.

- Two long-awaited facilities renovations completed in summer 2005 will provide new spaces and research capacity for the Center for Computer Research in Music and Acoustics (CCRMA) at the Knoll and for the Archaeology Center in Building 500. The Knoll was constructed in 1918 as the residence of the university president. Since 1946 the Music Department has occupied the Knoll, and it currently houses the world-renowned CCRMA program. In 1989, the Loma Prieta earthquake damaged the building, causing closure of the third floor. At project comple-

tion, CCRMA and the Center for Computer Assisted Research in the Humanities will occupy the entire building. With attention to the historic character of the building in major public spaces, the renovation included seismic strengthening, upgrading of infrastructure systems, and construction of three new high-tech studio spaces, a classroom, and open office space. Additionally, the third floor has been converted to office and library space, and a new performance space with capacity for eighty-five people will be added.

- A portion of Building 500, just behind the Main Quad, that was recently vacated by the Mechanical Engineering Department has become the new home for the Archaeology Center, which was previously housed in several locations on campus. The renovation included seismic strengthening and the development of state-of-the-art lab facilities for faculty and graduate students. From its inception in the eighteenth and nineteenth centuries, archaeology has been linked to history and the humanities on the one hand, and to the natural sciences on the other. The Archaeology Center builds on the research interests of faculty and students in multiple academic departments (Cultural and Social Anthropology, Anthropological Sciences, and Classics) without confining the practice to any one focus.
- Located along the west side of the Hewlett and Packard Quadrangle, the existing Hansen Experimental Physics Laboratory (HEPL) is a collection of buildings built primarily during the 1940s and 1950s to house high-energy physics experiments and the university's first atomic accelerator. In its present state, HEPL serves as an independent laboratory under the Dean of Research providing high-bay space and clean rooms. Current programs in the HEPL complex include astrophysics projects, located in each of the three end station buildings, as well as administrative and dry laboratory space in the North building and Annexes A and B. Long-range plans for the area call for the demolition of HEPL to provide sites for new science and engineering buildings. The new Physics and Astrophysics Building will accommodate programs displaced from HEPL North, End Station I, and Annexes A and B, as well as the emerging Astrophysics program focus. The new facility is envisioned to encourage multidisciplinary interaction among theoretical and experimental physics, astrophysics, cosmology, and engineering.

Construction on the building, which will be located on the open lawn south of the existing Varian Physics Building, began in 2005 and is expected to be completed in summer 2006. The building will have a total of 68,000 gross square feet on four floors, two above grade and two below grade.

SCHOOL OF LAW

The Law School sees important opportunities ahead. It is in motion on a variety of fronts, with the goal of becoming integrated more fully into the university. The school also plans improvements in clinical education, international law, and public interest law.

Salaries

Faculty salaries are a paramount concern. Salaries lag as much as 8%–15% behind those at top-paying law schools such as Harvard, Chicago, and Yale—the latter two being key rivals due to similarities in size and program. The school has managed, barely, to maintain a competitive salary program, but these schools are now offering packages stronger than Stanford's to attract and retain faculty. The Law School will need to continue an aggressive campaign to increase faculty salaries.

Clinical Education

One of the Law School's key priorities during the next several years is building a clinical program whose quality and reputation match those of the school generally. During the past two decades, while most law schools were building such programs, Stanford's efforts lagged.

The school is now well on the road to correcting this deficiency. The clinical programs it has launched in the past five years provide wonderful pedagogical vehicles for its students to integrate the world of legal theory into the dynamic of client representation. The Law School is confident that its clinical programs can become a national model of excellence and an important recruitment tool within the next five years.

Public Interest Law

The Law School is committed to training lawyers equipped to diligently, imaginatively, and honorably serve their clients, their profession, and the public interest. To accomplish this mission, the school is launching a new Public Interest Law Center. The goal of the center is to provide in-depth training, to create opportunities for public service, and to inculcate the

value of service. The center will further provide a focal point for innovative scholarly activities that examine law and the legal system in a broad, interdisciplinary fashion while creating connections to the private bar, legal organizations, and government agencies. Through conferences, institutes, seminars, and symposia, the center will engage with practitioners and study how best to utilize the law for public service.

General Challenges

The Law School's key challenges are to continue replenishing its faculty, to enhance its newly expanded clinical education programs, and to continue to build a campus whose physical infrastructure facilitates academic interchange and collaborative study. Specifically, the Law School aims to do the following:

- Rebuild its tenure-line faculty from thirty-eight professors to its historic level of forty-five, and eventually to fifty. The school wants to emphasize the hiring of junior faculty members and specialists in under-represented fields. These fields presently include public law (e.g., constitutional law, administrative law, and environmental and natural resources law); international law (especially "private" international law); and the empirical study of law. The Law School has existing faculty strength in this last area but views it as a field in which there is tremendous potential.
- Build its clinical faculty from three to five professors. Clinics will emphasize practical training and the development of professional responsibility in a variety of new fields while continuing to support the Stanford Community Law Clinic in East Palo Alto.
- Build a residential complex for law students adjacent to the Law School. This will create an integrated community in which collaborative study, debate, and interchange flow seamlessly from classroom to dorm room.
- Continue to build interdisciplinary research, teaching, and policy programs in law, economics, and business; law, science, and technology; environmental and natural resource law; and international law, business, and policy.

While focusing on these initiatives for future development, the Law School will need to continue providing existing programs that are essential to maintaining its competitive position in relation to peer schools.

These include:

- Summer research support for faculty members,
- Housing assistance for faculty members in addition to university programs,
- Loan repayment assistance to graduates in lower-paying public interest jobs, and
- Adequate levels of student service in the Law School's independently operated offices of admissions, financial aid, registrar, career services, and public interest programs.

SCHOOL OF MEDICINE

The School of Medicine is well positioned to enhance its many excellent programs. The highlights of the school's programs and initiatives are discussed below.

Education

A new medical school curriculum was launched in fall 2003. The objective is to immerse the students in an area in which they have an interest and through which they can acquire critical thinking skills and analytic research experience. The students are required to select a scholarly concentration among ten possibilities, including Clinical Research, Bioengineering, Neuroscience, Immunology, and Women's Health. Because research is an important facet of the school, the new curriculum better aligns medical students to the faculty and mission and will allow the school to train future students to be excellent clinicians and leaders in an area of medicine or bioscience. The redesign of clinical rotations will continue into 2005, incorporating the technology tools to be developed by the recently established Center for Immersive and Simulation-based Learning.

As the composition of the student body is compatible with the school's position as a research-intensive school of medicine, interdisciplinary courses and programs are being developed to encourage medical and graduate students to learn more about the challenges and opportunities in translational medicine. A question for the future is whether graduate programs in the school should become more discipline-based as compared to departmentally-anchored.

The postdoctoral fellowship program will be enhanced to enable selected fellows to pursue concomitant graduate studies if they are committed to a career in research. The postdoctoral program is a critical interface between

the laboratory and the clinic and is a key facet of the school's research engine.

Research

In 2004, directors for three of the four Stanford Institutes of Medicine—Cardiovascular, Cancer and Stem Cell Biology and Medicine, and Neurosciences—were appointed. In 2005, the director for the fourth institute—Immunity, Transplantation, and Infection—was appointed. To further facilitate the integration of the school's research mission, three strategic centers—Clinical Informatics, Imaging and Genomics, and Human Genetics—were formed and their directors appointed in 2005.

The institutes and centers together create a virtual bridge between the basic and clinical science communities, and between the school and other sectors of the university. They open new venues for research and opportunities to extend findings to patients at the major affiliated hospitals.

During the past year, further progress has been made in applying to become a National Cancer Institute-designated Comprehensive Cancer Center. The center's principal investigator was appointed in the fall, and the recruitment of a deputy director is close to completion. In December 2004, the school formalized an affiliation with the Northern California Cancer Center. Together with a faculty appointment, this agreement will provide the collaborative expertise that will expand the population studies component of cancer research and patient treatment programs.

The Bioengineering Department, started in 2004 as a joint endeavor of the Schools of Engineering and Medicine, successfully recruited three new faculty to help launch the department and also admitted the first group of graduate students. Plans are proceeding for additional faculty recruitments and for offering an undergraduate major in the next couple of years.

BioX continues to evolve. BioX is one of the major interdisciplinary themes of the university and includes a number of important programs, such as the Interdisciplinary Initiatives Program, the Advanced Instrumentation Program, the BioX Teaching Initiatives, and the BioX Symposia and Seminars. It brings together disciplines from across the university in ways that not only align the physical and life sciences but also create relationships with ethics, the humanities, education, and business.

Patient Care

The School of Medicine is one of three entities of the Stanford University Medical Center (SUMC), along with the Stanford Hospital and Clinics (SHC) and the Lucile Packard Children's Hospital at Stanford (LPCH). The school's mission is to be a premier research-intensive school that improves health in the twenty-first century through discoveries, leadership, and innovations in education, patient care, and biomedical and clinical research. The hospitals are critically important to this mission.

The three principles guiding attainment of this vision are: (1) SUMC is uniquely positioned to rapidly translate new research findings into clinical care paradigms; (2) SUMC must deliver outstanding patient care and clinical services; and (3) a sustainable financial model and its robust execution are critical.

To this end, each of the school's Institutes of Medicine has, in addition to a core mission of translational research and translational education, a clinical strategic service line counterpart. These medical center-wide strategic alignments are listed in the table on the next page.

The successful and rapid translation of knowledge from the basic sciences to its application to improve the diagnosis, treatment, and prevention of human disease will be one of the most sustainable differentiators for the school and the affiliated hospitals.

Communications and Government Relations

During the past year, the school's communications strategy has expanded. An integrated approach to communication, science education, and public policy is perhaps best demonstrated in the school's magazine *Stanford Medicine*. The fall 2004 issue focused on the science and politics of stem cell research, the winter 2005 issue on the "ticking time bomb" of health care in America. Both played an important role in educating policymakers and other leaders about the important issues surrounding stem cell research and the U.S. health care system.

Together with the communications efforts, government relations efforts have focused on the national debate regarding stem cell research and on the National Institutes of Health (NIH). Issues involving the NIH range from conflicts of interest to budget and reauthorization.

**STANFORD UNIVERSITY MEDICAL CENTER
INSTITUTES AND CLINICAL CENTERS**

School of Medicine	SHC	LPCH
Stanford Institute for Cancer and Stem Cell Biology	SHC Cancer Center	LPCH Center for Cancer & Blood Diseases
Neurosciences Institute at Stanford	SHC Neurosciences Center	LPCH Brain and Behavior Center
Stanford Cardiovascular Institute	SHC Cardiac Center	LPCH Heart Center
Stanford Institute for Immunity, Transplantation, and Infection	SHC Liver, Kidney, and Pancreas Transplantation Center	LPCH Transplant and Tissue Engineering Center

Planning for Regenerative Medicine Initiatives

The school has instituted a number of plans to organize its efforts in stem cell research in conjunction with those of the newly established California Institute on Regenerative Medicine (CIRM). The CIRM will oversee the implementation of the \$3 billion approved by the state of California for stem cell research. Several committees and subcommittees are being formed within the Stanford Institute for Cancer and Stem Cell Biology. A Program in Regenerative Medicine Advisory Committee is charged with initiating and coordinating all efforts in regenerative medicine.

VICE PROVOST FOR UNDERGRADUATE EDUCATION

The 2005/06 budget for the Office of the Vice Provost for Undergraduate Education (VPUE) reflects its ongoing commitment to recent initiatives, particularly in academic advising; to its cornerstone programs, such as Stanford Introductory Studies and Undergraduate Research, that foster collaboration between students and faculty; and to the implementation of the new requirement in Writing and Rhetoric. Created just over ten years ago, and now in its fifth and final year of a successful fundraising campaign, the VPUE is also well positioned to evaluate its own structure and organization to inform and guide its evolution over the next decade.

In 2004, a new Director of Undergraduate Advising Programs (UAP) was appointed in the VPUE. In collaboration with the Faculty Director of Undergraduate Advising, she is taking steps to redefine “academic advising” as a coordinated and often complex effort to support all students as they negotiate their particular academic paths at Stanford, and to aid them in tak-

ing full advantage of the opportunities the university affords. Toward this end, an Academic Director was appointed in Wilbur Hall in 2004, in a pilot project designed to provide coordinated, informed, and timely advice to freshman residents. The Academic Director meets with students daily and works closely with a variety of individuals and offices on campus, including Residence Deans, the Dean of Freshmen, the Registrar, the Office of Accessible Education, academic advisors, and faculty across the university, to ensure students’ academic progress and well-being.

Similarly, in recognition of the challenges faced by Stanford’s 700+ scholar-athletes and the support provided to them by an academic advisor in the UAP, an Academic Director position was created in the Athletic Academic Resource Center in the Department of Athletics. The immediate success of both Academic Director positions in responding to student needs for individual guidance supports the VPUE’s plan to create similar positions across the campus.

In other initiatives to improve advising, the VPUE has been actively recruiting faculty to serve as academic advisors to freshmen and sophomores. Through these efforts, faculty involvement in freshman advising for the 2004/05 academic year increased by 50%. Plans are also under way, in collaboration with school deans in the Schools of H&S, Engineering, and Earth Sciences, to organize a “Majors Day” during spring quarter, when faculty and relevant departmental advisors will be available to sophomores to discuss the choice of major.

To coordinate the support and advising that freshmen receive, the Freshman Dean’s Office (formerly the Office of Freshmen and Transfer Students) was incorporated into the VPUE in 2004. It works hand in

hand with the UAP. Together, the Dean and Director have initiated collaborations with units in the Office of the Vice Provost for Student Affairs, as well as with Undergraduate Admissions, to improve, for example, the support offered to students in difficulty and the process by which academic advisors are assigned to new students, and to increase the variety of rich intellectual offerings during New Student Orientation and Admit Weekend.

Potter College in Sterling Quad, created in 2004, is a pilot project designed to provide an intellectually stimulating environment for upperclass students interested in sharing their interests with their peers and faculty in informal settings. Potter is a programmatic cousin to Freshman-Sophomore College. Residents engage in weekly discussions, workshops, and seminars; participate in events both on and off campus sponsored by the faculty dean who oversees both programs; and help to organize the Symposium for Undergraduate Research in Progress during Admit Weekend.

The 2005/06 budget will support the final year's implementation of the new requirement in the Program in Writing and Rhetoric (PWR), which took effect with the class of 2007. All students must now complete, by the end of the sophomore year, a course that emphasizes writing for oral presentation and communication. Additional PWR lecturers will be hired to accommodate these students.

In recognition of its transition from a young to a more mature organization, the VPUE assumes its programs are, for the most part, in steady state. The 2005/06 budget reflects this assumption. Ten years after the Commission on Undergraduate Education created the office, it is time to review its goals and reflect on the extent to which its programs meet the changing needs of both undergraduates and faculty. The staff will be conducting a series of self-studies designed to challenge existing operational models and to identify functional, administrative, and spatial efficiencies among units and programs. This assessment process reflects both an opportunity and an obligation to sustain and invigorate the VPUE's commitment to excellence in undergraduate education.

VICE PROVOST AND DEAN OF RESEARCH

The Office of the Vice Provost and Dean of Research and Graduate Policy has responsibility for the development and oversight of research policy; oversight of the

independent laboratories, centers, and institutes; policy development for Stanford's graduate education; and management of the Offices of Technology Licensing, Science Outreach, Environmental Health and Safety, and Research Compliance, and the Sexual Harassment Policy Office.

The thirteen independent laboratories, centers, and institutes reporting to the Dean of Research encourage and support Stanford's interdisciplinary research and scholarship. These units provide strong programs that both complement and supplement Stanford's departmentally based research and scholarship, in addition to attracting excellent students and external scholars. In 2003/04, the organizations reporting to the Dean of Research accounted for 19% of Stanford's research volume (excluding SLAC).

The following are examples of new initiatives designed, developed, and funded in the independent labs, centers, and institutes:

- The Stanford Center for Innovations in Learning has received National Science Foundation (NSF) funding for a research center, Learning in Informal and Formal Environments (LIFE), that seeks to understand and advance human learning through a simultaneous focus on implicit, informal, and formal learning. The LIFE Center is a cooperative effort involving Stanford University, the University of Washington, the Stanford Research Institute, and the NSF. The center was awarded \$25 million for an initial five-year period. The LIFE program consists of three strands of research. The first strand, on implicit learning and the brain, explores underlying neural processes and psychological principles associated with implicit learning in cognitive, linguistic, and social domains in varied settings over the human lifespan. The second strand, on informal learning, studies cognitive, social, affective, and cultural dimensions that propel informal learning and development outside of school and sustain transfer of learning across settings. The third strand, on formal learning, develops principled and experimentally tested designs, often accompanied by innovative uses of technology, that promote the kinds of learning in formal educational settings (e.g., schools, workshops) that prepare people to continue to learn throughout their lives. The LIFE Center will also conduct cross-strand collaborations. The first year's theme for these collaborations is interactivity and learning.

- The Kavli Institute for Particle Astrophysics and Cosmology (KIPAC) has established the KIPAC Enterprise Fund. Grants from the fund are intended to support particle astrophysics and cosmology projects that will develop into major research programs. Three grants were awarded to three Physics department faculty based on the following criteria: scientific merit, achievability of stated goals, potential for evolving into a major KIPAC research program, involvement of KIPAC members in the research, and involvement of researchers in neighboring institutions and other Kavli Institutes.
- The Geballe Laboratory for Advanced Materials has received funding from the NSF to establish the Stanford-IBM Center for Probing the Nanoscale. The center has five principal goals: to develop novel probes that dramatically improve the capability to observe, manipulate, and control nanoscale objects and phenomena; to apply these novel probes to answer fundamental questions in science and shed light on materials issues of economic importance to industry; to educate the next generation of scientists and engineers regarding the theory and practice of these probes; to transfer technology to industry so that corporations can manufacture and market these probes worldwide; and to inspire tens of thousands of middle school students by training their teachers at a summer institute. Participants at the center include Stanford faculty members from departments spanning the physical sciences and engineering, IBM research staff, and numerous students and postdocs.
- The Stanford Program for Bioengineering, Biomedicine and Biosciences (BioX) has received funding for a five-year program: National Center for Physics-Based Simulation of Biological Structures (Simbios). The center is one of four new national centers, funded by the NIH, established to build the computing infrastructure to support biomedical research. Physics-based simulation provides a framework for understanding biological form and function. Simulations help researchers understand the physical constraints on systems as they engineer novel drugs, drug delivery mechanisms, synthetic tissues, medical devices, or surgical interventions. The center creates and supports a simulation toolkit for users to develop and share accurate models and simulations at scales ranging from atoms to organisms. Faculty, students, and postdoctoral fellows from more than ten departments and three schools (Engineering, Humanities & Sciences, and Medicine) are participating in the program.

HOOPER INSTITUTION

The Hoover Institution is a center for scholarship, public policy research, and archival activities committed to examining and generating ideas that define a free society. Hoover fellows address how society approaches collective concerns while balancing freedom and order—economically, politically, and socially. The Hoover Institution Library and Archives seek to collect and make accessible the historical record of human endeavors to find this balance.

The institution's research program centers around institutional initiatives that embrace the pursuits contained in its mission: improving the human condition; securing and safeguarding the peace; and seeking representative, yet limited, government. These seven initiatives are:

1. Economic Prosperity and Fiscal Responsibility
2. American Educational Institutions and Academic Performance
3. Individual Freedom and the Rule of Law
4. The Growth of Government and Accountability to Society
5. American Individualism and Societal Values
6. Diminishing Collectivism and Evolving Democratic Capitalism
7. National Priorities, International Rivalries, and Global Cooperation

Within these initiatives, fellows seek to analyze the effects of government actions relating to public policy; to generate, publish, and disseminate ideas that encourage positive policy formation; to convey to the public, the media, lawmakers, and others an understanding of important policy issues; and to promote vigorous dialogue.

From the academic disciplines of economics, history, law, and political science, fellows often collaborate on multiyear efforts to examine issues requiring particularly focused and extensive inquiry. Major emphasis continues on the American Educational Institutions and Academic Performance initiative led by Hoover's Koret Task Force, which is entering its seventh year studying K–12 education in the United States.

The Hoover Library and Archives has returned to its original mission, as envisioned by Herbert Hoover:

to gather archival and special collections, to preserve these rare documents on modern history, and to serve as a repository for rare and unique materials. While the collecting efforts encompass all aspects of political, economic, and social change, emphasis is being placed on three collecting priorities: the history of communism, transition to democracy and economic freedom, and cultural conflict. Currently there is a nexus of collecting and preservation activities on modern Chinese history, including the personal diaries of Generalissimo and Madame Chiang Kai-Shek, personal papers of T.V. Soong and H. H. Kung, and a multiyear effort to microfilm and preserve the archives of the Kuomintang party in Taiwan.

An area of special importance is the expanded effort to preserve unique materials collected during the twentieth century from damage, material deterioration, and normal wear and tear. In 2005/06 the institution will be constructing and equipping a leading-edge 6,000-square-foot preservation facility. This facility will be equipped to restore and preserve audio/visual media as well as more traditional collections. State-of-the-art digitization equipment will aid with current projects to preserve the archives of the Commonwealth Club of California and William Buckley's *Firing Line*. Ultimately these efforts will make collections safer and more readily accessible to users on site and over the Internet.

Hoover fellows and other scholars are also being encouraged and supported in their research and publication efforts based on material found in the archives. A series of books published in both English and Russian continues to be developed based primarily on original documents found in Hoover's Russian/CIS collection. Extraordinary interest in the Radio Free Europe/Radio Liberty archives has resulted in a developing international scholarly effort to understand effective means of cross-cultural cross-boundary communication. In yet another example, the developing rich archive of materials from post-World War II China and Taiwan is the basis for the formative Modern China research project.

With the increasing prominence of round-the-clock news cycles; global satellite, cable, and broadband media information access; and the heightened attention given to public policy issues, competition for audiences seeking relevant data continues to intensify. The institution's communications and outreach functions seek to promote the ideas and scholarship of Hoover fellows, publicize the holdings of the library

and archives, and promote accessible dialogue on policy issues addressed by the institution.

Recent and proposed new communications activities have focused on the Internet, periodical publications, radio, and engagements with print and broadcast journalists. The Hoover Institution communications program includes the following:

- Weekly Essays, a series of op-eds by Hoover fellows that appears in a number of periodicals, is syndicated to newspapers, and distributed internationally,
- Books, essays, and articles written by Hoover scholars appearing in the popular press, newspapers, and scholarly journals, and on the Hoover website,
- Opinion articles by Hoover fellows appearing on the op-ed pages of major newspapers, magazines, and periodicals, and on the Internet,
- Television and radio appearances by fellows on national and local news, public information forums, and call-in radio programs,
- Periodical publications: *China Leadership Monitor*; *Hoover Digest: Research and Opinion on Public Policy*; *Education Next: A Journal of Opinion and Research*; and *Policy Review*®,
- The Media Fellows program, which provides working media the opportunity to interact with the circle of resident Hoover fellows on site at the Hoover Institution, and
- News releases and daily reports detailing the intellectual product of the institution via Hoover's quarterly newsletter and on the Hoover home page on the World Wide Web.

Facility enhancements are designed to support the programmatic and communication needs of the institution and the university. Construction of a "conference room in the round" has been completed. In 2005/06, this facility will be used for live, two-way video and audio teleconferencing and state-of-the-art multimedia presentations. This capability will support Hoover's efforts to build a vital scholarly community of leading intellectuals from different disciplines, vocations, and geographic areas.

SLAC

As a National User Facility of the Department of Energy (DOE), SLAC continues to provide world-class experimental facilities to about 3,000 scientists, annu-

ally, from all over the world in the two main research programs of Particle/Astroparticle Physics and Photon Science. The accelerator facilities deliver electron and positron beam characteristics unmatched anywhere in the world. The ultra-high intensity x-ray synchrotron radiation at SPEAR3 of the Stanford Synchrotron Radiation Laboratory (SSRL) serves many areas of science including materials sciences, structural biology, chemistry, and others. The construction of Linac Coherent Light Source (LCLS) will add another unique facility by providing the world's first x-ray free electron laser. In 2006, SLAC will begin the physical contraction of the conventional facilities associated with LCLS which takes advantage of the existing infrastructure at SLAC by utilizing the last 1/3 of the existing 3 km linear accelerator. LCLS is scheduled to become operational in 2009. The \$315 million construction of LCLS is funded by the DOE Office of Basic Energy Sciences.

Photon Science

Photon science is perhaps the most rapidly expanding element in the changing face of sciences at SLAC. It will be driven by the expansion and utilization of the SPEAR3 synchrotron light source as well as the development of a completely new class of light sources based upon electron linacs. This development has already begun with the Sub-Picosecond Pulsed Source (SPPS) which is delivering 80 fsec pulses of hard x-rays that are being used to gain first experience with the application of x-ray scattering and absorption techniques to study properties of materials on this very short time scale. The LCLS will deliver intense femtosecond coherent x-ray pulses with 10 billion times higher peak brightness than those from existing synchrotron sources. These extraordinary beams will explore previously inaccessible realms of structural dynamics in the chemical, biological, and materials sciences as well as find new applications in nanoscale phenomenology, and atomic and plasma physics.

The state-of-the-art SPEAR3 is a low emittance, high current synchrotron light source which delivers beams whose intensity and brightness are competitive with any light source in the world in its intermediate energy class. SPEAR3 has significant expansion capacity for new beam lines. The first two new beam lines are already in fabrication. The first beam line, funded by Cal Tech with a gift from the Moore Foundation, is designed for macromolecular crystallography. The second one for nanoscale research is funded by DOE. Both beam lines are expected to be completed in 2006. In the building

that houses these new beam lines, about 6,000 square feet of new space will be completed in 2005 for the X-ray Laboratory for Advanced Materials (XLAM) at SSRL to provide office and laboratory space for the increased staff.

Particle and Astroparticle Physics

SLAC's main particle physics program is the PEP-II/BaBar B Factory which examines a cosmological mystery: the crucial matter-antimatter asymmetry that led to the existence of the visible universe. The BaBar collaboration (600 physicists from 11 countries) continues to produce physics of exceptional quality. With sufficient funding, a nine-month experimental operation is planned in 2005/06. The run will be followed by a shut down of about four months to install major improvements for the PEP-II accelerator and the BaBar detector. These improvements are the last of a series of upgrades that are focused on maximizing the BaBar data sample before the planned conclusion of the experimental operations in 2008.

The primary focus of the laboratory's future accelerator-based particle physics program is the International Linear Collider (ILC), which is also the highest priority new facility for the field of particle physics. With the adoption of the superconducting RF technology for the ILC, SLAC has refocused its efforts and will continue to be a major contributor to the development of the technologies to realize an electron-positron linear collider designed to explore the new fundamental physics at the TeV energy scale. In 2005/06, the plan is to continue R&D and pre-conceptual design on the critical elements necessary to build a linear collider at minimum cost, as part of a global effort with the U.S. and foreign partners.

In the last decade, SLAC's particle physics mission has broadened into the closely related fields of astroparticle physics and cosmology. The GLAST mission represents SLAC's first major venture into astroparticle physics. GLAST is a space-based gamma-ray telescope that will be launched in 2007. The GLAST research program will explore how cosmic accelerators work and what they are accelerating, including the study of gamma-ray bursts and observations of jets emanating from active galactic nuclei and galactic black holes. In addition, GLAST will search for Dark Matter in our galaxy. The telescope is being built at SLAC by an international collaboration led by the Stanford team (SLAC, Physics Department and HEPL). In 2006, the instrument

will be completed and shipped out for further testing prior to integration with the satellite. In addition to GLAST, the new Kavli Institute of Particle Astrophysics and Cosmology will bring new projects and research opportunities to SLAC.

Infrastructure

SLAC has initiated a \$15.6 million project, funded by the DOE, to replace a significant portion of the aging underground mechanical utilities and to improve the seismic safety of several important research, experimental, and computing facilities. The project, currently in design, will soon begin phased construction through 2008.

STANFORD UNIVERSITY LIBRARIES AND ACADEMIC INFORMATION RESOURCES (SULAIR)

SULAIR continues to serve Stanford students and faculty with a wide range of information sources and resources. Numerous programs and projects begun in previous years will continue to play out in 2006, but there are some new demands.

A major concern is the cost of academic journal subscriptions. In keeping with policies in place for more than a decade, SULAIR continues to decide on each and every journal subscription at the university. Annual increases in the costs of those subscriptions have outpaced the ability to meet them. Therefore, library staff weed the subscriptions each year, always with faculty advice and assistance. SULAIR has a fairly effective document delivery service contracted to provide articles to faculty from journals to which the university does not subscribe. However, there is concern that Stanford now subscribes to the bare minimum number of journals, especially in the scientific and engineering disciplines.

SULAIR will release a scholarly communications website that will offer advice to faculty on the placement of their articles with responsible publishers and their intellectual property rights and choices.

Stanford continues to acquire large numbers of books from all around the world. The Internet revolution has not yet begun to deliver electronic books in easy-to-read formats, and the vast majority of books acquired are only in physical form. Stanford has become a partner with Google in a massive book digitization project. Books are sent to Google and the texts made suitable

for local structuring and indexing. Once converted, they will be available for reading on the campus network. A major focus for 2006 will be the ingestion and conversion of digitized books.

Absorption of books and bound volumes of newspapers from the Hoover Institution Library will continue and may very well be completed in 2005/06. Numerous bibliographic records have to be changed and improved. A great many volumes, perhaps over 500,000, have to be assigned to shelves in Green Library and elsewhere in the library system.

The East Asia Library, ensconced in the fourth-floor aerie of Meyer Library, is rapidly growing so that its collections support the wide range and growing depth of academic interests in East Asian subjects. In cooperation with the new Korean Studies program, a Korean Studies librarian will be employed on a term basis to build a Korean collection very quickly. Permanent funding will be sought for support of the Korean collections in SULAIR.

In concert with numerous faculty, SULAIR will continue to add archival and rare book collections to make research, teaching, and learning distinctive at Stanford. To such recently acquired collections as the Herbert Matter design collection, the Eduardo Frei presidential papers (on CDs as a result of training and advice given by SULAIR to the Frei Fundacion in Santiago, Chile), the Stephen Jay Gould papers and library, and the Samson Copenhagen Collection of Rare Judaica books, will be added several important collections in feminist studies and various area studies.

Planning is under way for the new Engineering Center, a building in SEQ2 that will include a library devoted to engineering, physics, and computer sciences. The Dean of the School of Engineering and the University Librarian have charged a planning group with defining a program for a library without books. That committee will report its results and design work will begin in 2005/06.

Stanford Auxiliary Library (SAL) 3 is filling up. In the first eighteen months of operation, it has stored about 500,000 volumes. Every library on campus has storage needs, and the existence of SAL3 makes possible the expansion of the physical collections. Deliveries are made each day from SAL3 to Green Library and then across the campus. The loading of SAL3 will continue at this rate in 2005/06.

The Digital Services Group, newly formed in 2004/05 to optimize SULAIR for the digital future of libraries, will expand and enhance its digital production services as well as cope with the flood of files from Google of digitized books. That group is also involved with enhancing the Socrates online public access catalog, so that Stanford patrons can go directly from a catalog entry to a virtual book, regardless of location of the server containing the book. This group also has responsibility for the preservation of numerous fragile media.

Following the quite concentrated and successful effort to program the next generation of CourseWork, a locally built course management system used by more than half of Stanford's faculty, SULAIR will implement CourseWork NG in phases. The new system has more modules and is easier to use. In addition, it uses a new database structure so that instructors and students can more easily save and retrieve material. This software is open source, and already about one hundred major

U.S. colleges and universities are making use of it. Course management systems help faculty make more effective use of network communications to support their courses, give tests, grade papers, and interact with students outside of classrooms. Course management systems thus allow redirection of administration time to teaching and learning. Full implementation of CourseWork NG should occur in 2006/07.

Residential Computing is working with the VPUE on plans to convert computer clusters in the student residences to technology spaces better equipped to support collaborative work by groups of students and to produce a wider variety of reports, posters, and the like for their courses. Residential Computing has been a leader in its field and continues to engage over one hundred students each year as Residential Computing Consultants who assist other students in taking full advantage of the numerous systems and services Stanford offers, mainly through SULAIR.

