CHAPTER 2

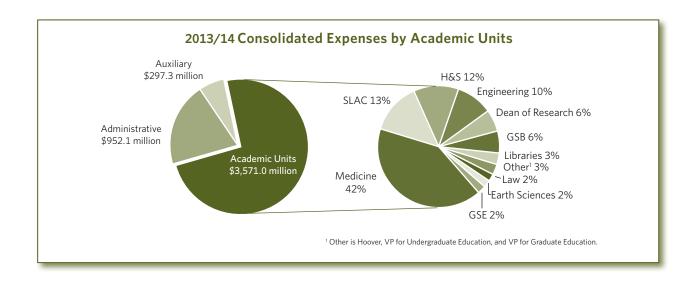
# **Overview of Academic Units**

his chapter summarizes programmatic and financial activity for each academic unit. The revenue expectation in 2013/14 for these academic units comprises over 74% of the university total revenue. Overall, the academic units project an operating surplus of \$115.4 million. After transfers to facilities and endowment, the unit budgets overall will be virtually balanced with a \$32.6 million surplus.

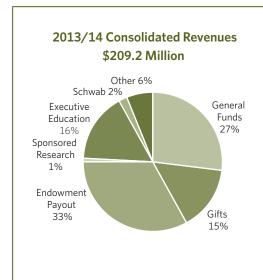
## **CONSOLIDATED BUDGET FOR OPERATIONS, 2013/14: ACADEMIC UNITS**

[IN MILLIONS OF DOLLARS]

	TOTAL REVENUES AND TRANSFERS	TOTAL EXPENSES	RESULT OF CURRENT OPERATIONS	TRANSFERS (TO)/FROM ASSETS	CHANGE IN EXPENDABLE FUND BALANCE
Academic Units:					
Graduate School of Business	209.2	197.9	11.3	(11.3)	(0.0)
School of Earth Sciences	61.2	57.6	3.7	(3.5)	0.2
Graduate School of Education	57.1	56.8	0.3	(0.6)	(0.3)
School of Engineering	377.3	358.3	19.0	(12.1)	6.8
School of Humanities and Sciences	445.6	430.1	15.5	(30.8)	(15.3)
School of Law	78.4	74.3	4.1	(4.0)	0.1
School of Medicine	1,589.9	1,517.1	72.8	(23.1)	49.7
Vice Provost and Dean of Research	198.3	205.5	(7.2)	5.0	(2.1)
Vice Provost for Undergraduate Education	43.4	43.3	0.1		0.1
Vice Provost for Graduate Education	3.6	7.1	(3.5)	(0.2)	(3.7)
Hoover Institution	51.4	49.2	2.2	(3.2)	(1.0)
Stanford University Libraries	108.6	111.0	(2.4)	1.0	(1.5)
SLAC	462.4	462.8	(0.4)		(0.4)
Total Academic Units	3,686.4	3,571.0	115.4	(82.9)	32.6



# **GRADUATE SCHOOL OF BUSINESS**



[IN MILLIONS OF DOLLARS]			
	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	193.8	198.9	209.2
Expenses			
Salaries and Benefits	98.5	109.4	114.8
Non-Salary	69.3	77.4	83.1
Total Expenses	167.8	186.8	197.9
Operating Results	26.0	12.1	11.3
Transfers From (to) Endowment &			
Other Assets	(12.7)	0.0	0.0
Transfers From (to) Plant	0.0	(4.4)	(11.3)
Surplus / (Deficit)	13.3	7.8	0.0
Beginning Fund Balances	65.7	79.0	86.8
Ending Fund Balances	79.0	86.8	86.7

# **Programmatic Directions**

The Graduate School of Business (GSB) has built a global reputation based on its management and leadership programs, including the two-year MBA; the one-year MS in Management, which will grow by 10% in the next two years; the PhD program; Stanford Ignite, a part-time program in innovation and entrepreneurship; and Executive Education, which also continues to grow annually. Each creates an experience that transforms people and prepares them to change lives, change organizations, and change the world. Programs engage the highest-quality students with worldclass faculty across Stanford University's seven schools, as well as alumni, Silicon Valley professionals, global executives, and the broader world community. The state-of-theart Knight Management Center offers flexible classroom spaces for hands-on experiential learning, small-group leadership labs, and team-based learning. It also serves as a convening space for major forums and discussions.

The school met its goal of increasing the number of tenure-line faculty members to 110 in 2011/12. Subsequent program growth and a number of new research initiatives created the need for additional faculty, and an aggressive recruiting effort resulted in 116 tenure-line faculty members for 2012/13. This number suffices to support the GSB's current teaching and research requirements. Based on present needs, the school intends to maintain the tenure-line faculty number

under 120. Although in the past two years few faculty have departed, the school generally loses some faculty members each year. Therefore, to maintain current levels, the school continually recruits in all disciplines. It also continues recruitment related to the Stanford Institute for Innovation in Developing Economies (known as SEED).

The GSB is also working with the university to develop joint degrees with the School of Engineering to add to those already offered in education, environment and resources, political science, and law. By combining academic disciplines, the school aspires to graduate students prepared to pursue professional interests and become agents of change. The GSB aims to increase the number of students who earn joint degrees from one in six today to one in four by 2020.

Through a comprehensive planning exercise, the GSB developed the GSB 2020 strategy, with an objective of strengthening its core and increasing reach and impact. Many of the resulting initiatives focus on global strategy, SEED, and distance learning/education technology.

A new department, the Global Innovations Program, is charged with creating GSB programs globally. These include Stanford Ignite, a multiweek program that teaches entrepreneurs, graduate students, and technical professionals how to bring their research and ideas to market. Stanford Ignite

is offered at Stanford, in Europe, and in India, and it is to be developed for China in 2014.

The GSB will also leverage Stanford University's center at Peking University in Beijing as a base to facilitate faculty research, develop case studies, and scale programs on innovation and entrepreneurship. Two staff members are located in China to manage these efforts. The GSB continues to provide a robust selection of opportunities for MBAs to fulfill their global experiences requirement through study trips and immersion projects.

The GSB launched SEED in November 2011 with a mission to stimulate creation of economic opportunities through innovation, entrepreneurship, and the growth of businesses that change the lives of people who live in poverty around the world. SEED is exploring innovation hubs, first in Ghana and then in other developing countries, to create a sustained physical presence locally and provide direct engagement. With a critical focus on barriers to entrepreneurship and business growth, SEED will concentrate on sectors such as health care, food and nutrition, education, water, and energy to maximize its impact.

The GSB is developing new ways to leverage technology in education. In fall 2012, the school partnered with the Stanford Center for Professional Development to offer a joint online Certificate Program in Innovation and Entrepreneurship. The eight-course program can be accessed from anywhere in the world. The GSB also has invested in new digital equipment and studios to create online content. Technology specialists will support faculty in delivering the most effective and hands-on learning experience, using "flipped classroom" techniques that allow classes to move faster and cover more material. For example, faculty member Sridhar Narayanan's Marketing Analytics course has been transformed by creation of tutorial videos that help students learn how to use software tools, analyze data, and develop plans of action. Students view videos before they tackle problem sets, allowing the professor to spend more class time examining real-world cases. The school is also developing virtual classroom experience technology with high-end teleconferencing to allow seamless classes for groups meeting simultaneously at Stanford and other parts of the world.

## **Consolidated Budget Overview**

The 2013/14 GSB Consolidated Budget for Operations shows total revenues and operating transfers of \$209.2

million and expenses of \$197.9 million, yielding an operating surplus of \$11.3 million. This surplus will be transferred to a plant account and used for the concept and design approval phases of the GSB student housing expansion, resulting in a balanced budget after transfers.

GSB revenues and transfers for 2013/14 are projected to grow by about \$10.3 million, or 5.2%, over the current year-end projection, largely due to growth in tuition and instructional fees, Executive Education revenue, and endowment payout. Tuition for first-year MBAs is planned to increase 3.9% to \$59,550. Tuition for the MS program (previously known as Sloan) is planned to increase 3.8% to \$112,100, and the number of students is projected to increase 10% to 88. The PhD tuition increase is estimated at 3.5%. Instructional fees for Global Innovations programs will increase 37%, from \$3.5 million to \$4.8 million, due to deployment of additional global locations. Executive Education revenues are projected to be \$33.3 million in 2013/14 and to reach \$48 million by 2020.

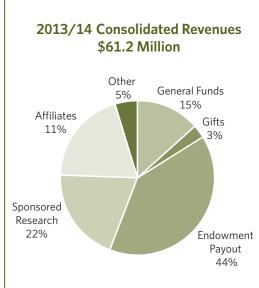
Endowment payout and interest income are projected to increase by 5.8% over the current-year projection as a result of growth in principal and new gifts. They are expected to provide 33% of overall funding for the GSB, particularly for teaching, research, and fellowships. The GSB projects expendable gifts to be \$31 million, roughly the same as the forecast for 2012/13.

GSB expenses are projected to increase by 5.9% over 2012/13. Teaching and research costs will grow due to an increase in salaries, net growth of one faculty member and four lecturers, and inflationary growth in research expenses. Executive Education expenses will grow to support both custom and open-enrollment program growth through 2020. SEED and Global Innovation expenses will increase to support programmatic initiatives around the world.

#### Capital Plan

The GSB anticipates a \$66.7 million capital outlay over five years to build an additional housing facility so that all first-year MBA students (excluding families with children) can be accommodated with on-campus housing if desired. The facility is planned to provide a minimum of 150 net new beds and to have academic facilities and collaborative work areas. The housing expansion is in the early planning stages and is expected to be operational by summer 2017.

# **SCHOOL OF EARTH SCIENCES**



[IN MILLIONS OF DOLLARS]			
	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	59.6	58.8	61.2
Expenses			
Salaries and Benefits	36.6	39.2	40.9
Non-Salary	19.1	16.7	16.6
Total Expenses	55.7	55.9	57.6
Operating Results	3.9	2.9	3.7
Transfers From (to) Endowment &			
Other Assets	(2.5)	(2.5)	(2.5)
Transfers From (to) Plant	0.0	(1.0)	(1.0)
Surplus / (Deficit)	1.4	(0.6)	0.2
Beginning Fund Balances	46.8	48.2	47.7
Ending Fund Balances	48.2	47.7	47.8

# **Programmatic Directions**

The School of Earth Sciences has evolved substantially over the past fifteen years and now finds itself at a crossroads. Looking towards 2014, the school will focus on four issues: expanding its academic program, planning for a new Earth Sciences building, developing a stronger communications presence, and continuing its commitment to diversity.

The school's changes over the past decade or more have been targeted at improving its ability to engage in "use-inspired" research and educate future leaders in the significant sustainability challenges related to Earth's resources, hazards, and environment. The question Earth Sciences now grapples with is, "What's next?" There is tremendous need and opportunity to expand the role of the school to address the challenges facing the planet and its growing population. In the past, the school has focused almost exclusively on the biophysical system. Earth Sciences feels it is now critical to expand that focus to include the coupled human-environmental system, where interactions between human decision making and the environment and resources are key.

Through research collaborations across campus, Earth Sciences has made progress in understanding and solving problems around these complex sustainability challenges.

And yet critical gaps in expertise impede Stanford's progress in addressing these challenges as they relate to the human-environmental system. Resource policy analysis, geography and planning, governance, and risk and decision analysis related to resource and environmental issues are some examples of these critical gaps.

The school's experience in education over the last decade has identified a similar problem. As student demand for Earth Sciences' interdisciplinary programs continues to expand, having increased some 60% since 2007, significant gaps in teaching and mentoring have emerged, especially in the environmental social sciences. The school believes it can help address these needs by expanding its faculty in critical areas not already present within the university. Areas such as resource economics, land use, urban planning, and food production and security—as they relate to the human-environmental system—are all of great interest to Stanford students. Given the school's focus on earth-related concerns, the School of Earth Sciences has a responsibility to lead the way in developing solutions and educating leaders who can address society's most demanding sustainability problems.

To support this evolving mission, Earth Sciences needs a new research building. The Mitchell Building can no longer meet the demands of modern research. In 2012 the school developed a master plan for a 21st-century Earth Sciences district, integrating the school's existing buildings of Green, Geology Corner, and the Yang and Yamazaki Environment & Energy Building with a new building to replace Mitchell. The plan calls for a large facility of approximately 150,000 gross square feet to serve as the school's home base; raising funds for a building of that size, however, may be too ambitious an undertaking. Therefore, in 2013, Earth Sciences will explore alternatives, including a smaller new building, a substantial remodel of Mitchell, and ways to integrate these buildings, with Green and Geology Corner, into a more cohesive whole.

While the School of Earth Sciences has evolved to be a school of earth, resources, and the environment, whose teaching and research encompass a broad range of the biophysical sciences and engineering, and even social science, it is not widely recognized as such. Part of the problem is the name; "Earth Sciences" denotes solid earth sciences and implies a narrow and outdated focus that does not reflect what the school is today. This lack of understanding limits the school in many ways, challenging its ability to garner support from a broad pool of donors, or recognition for its excellence and breadth by those outside the scientific community. To address this, the school is engaged in a branding project to develop a more polished and accurate image that effectively reflects what the school is today. In the coming year this project will focus on crafting messages, building capacity, and bringing the Earth Sciences story to a broad range of friends, alumni, donors, and trustees, as well as raising its profile with the media.

Finally, efforts to diversify the school's population remain strong. Through a number of programs under the auspices of the school's Office of Multicultural Affairs, steady, measurable progress has been made in bringing diversity to both the student and the faculty populations. In early 2013, Earth Sciences welcomed its first female underrepresented minority faculty member. Through the Faculty Incentive Fund, Earth Sciences continues to encourage efforts to recruit faculty who would add diversity. The school will also continue to earmark resources for its Diversity Incentive Fellowships, which have helped bring more underrepresented groups to the school's graduate student population.

Looking ahead, 2013/14 promises to be an exciting year, one in which the future direction of the school will be clarified, a

new building brought closer to reality, a new school identity launched, and, it is hoped, continued progress made on expanding the diversity of the school community.

## **Consolidated Budget Overview**

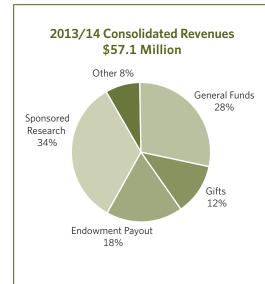
The 2013/14 consolidated budget shows total revenues and operating transfers of \$61.2 million and expenses of \$57.6 million, yielding an operating surplus of \$3.7 million. After transferring \$3.5 million to endowment principal and plant funds, the school will end the year with a projected surplus of \$157,000.

Restricted revenues in 2013/14 are projected to increase 2.6% over the estimated 2012/13 levels, growing by a combined \$1.2 million. Endowment income is expected to increase by 4.1%, or \$974,000, of which \$250,000 will come from payout on new gifts and pledge payments. Sponsored research revenue is projected to grow by 2.0%, or \$240,000, a slight reduction in real terms. All other types of restricted revenue are expected to remain flat.

Total expenses are expected to grow by \$1.7 million, or 3.0%, almost exclusively due to the projected 4.4% growth in compensation. In addition to the impact of the salary program, a modest planned increase in the number of staff and faculty contributes to the rising costs. Faculty hires are anticipated in geobiology, geophysics, and strategic minerals and policy. To support the growing demands of planning for a new facility and the continued need to renovate existing ones, a facilities director position will be added in 2013/14. A Geospatial Information System (GIS) lecturer position will also be added to respond to increased demand by undergraduate and graduate students desiring advanced GIS instruction. Non-compensation expenses are projected to decrease by 0.3%, or \$43,000. Cost rise is offset by a projected decrease in capital equipment expenditures over 2012/13, in part due to atypically high capital equipment spending on several medium-sized lab renovation projects in 2012/13.

Accumulated balances are projected to increase very slightly, by \$157,000, during 2013/14. While designated fund balances will increase in the upcoming year as start-up funding for anticipated new faculty hires is received from the university, the school will draw on its healthy accumulated endowment balance to support program growth.

# **GRADUATE SCHOOL OF EDUCATION**



[IN MILLIONS OF DOLLARS]			
[IN MILLIONS OF DOLLARS]	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	56.8	56.5	57.1
Expenses			
Salaries and Benefits	36.3	37.7	37.9
Non-Salary	19.2	18.7	18.9
Total Expenses	55.5	56.4	56.8
Operating Results	1.3	0.1	0.3
Transfers From (to) Endowment &			
Other Assets	(1.7)	(0.2)	(0.6)
Transfers From (to) Plant	0.0	(0.9)	0.0
Surplus / (Deficit)	(0.3)	(1.0)	(0.3)
Beginning Fund Balances	38.5	38.1	37.1
Ending Fund Balances	38.1	37.1	36.8

# **Programmatic Directions**

On January 14, 2013, the School of Education officially changed its name to the Stanford Graduate School of Education (GSE). While many of the nation's education schools are devoted solely to preparing undergraduates to become teachers, GSE focuses on preparing graduate students to be leaders in education as professors and researchers; as teachers, principals, and superintendents; and as policy makers, entrepreneurs, and executives in the private, public, and nonprofit education sectors. The name change accentuates the distinctly graduate nature of the research and training provided by the school.

The name change was one small, yet highly symbolic, outcome of a yearlong visioning and strategic planning effort that is close to completion. The resulting strategic plan focuses on four overarching values-driven goals:

- Excellence and leadership in education research and scholarship,
- The highest-quality professional development programs for teachers and school leaders,
- An increased focus on the production of practical knowledge, and
- A stronger intellectual community within the GSE.

One way that the school seeks to achieve these goals is to more closely connect and align its many research centers, which have increased significantly in number and size during recent years. The GSE is exploring various organizational models that will encourage academic cross-fertilization between groups that already have intersecting academic missions. One option of particular interest is establishing an overarching Institute for Educational Innovation that would house many of the school's existing centers. Advantages of such an institute include economies of scale, increased visibility of the GSE's problem-solving focus, and greater dissemination of the work of GSE faculty. It would capitalize on strengths already in the school and bring together the elements of a great intellectual community focused on problem solving and innovation in education.

The school's mission continues to emphasize the importance of academic leadership in cross-disciplinary research on global problems in education, and the provision of exemplary professional training for teachers, researchers, as well as educational leaders within its graduate programs. The school has embraced an even greater focus on collaborative research with educational practitioners that has useful, generalizable findings for institutional reform at the K-12 and postsecondary levels.

Of the many challenges facing educators today, the GSE has identified two particularly pressing issues that demand immediate increased attention from its faculty:

- Technological advances and their implication for learning and cost models in both K-12 and higher education, and
- Delivery of opportunity-generating education to lowincome students.

As faculty billets become available, the GSE will seek opportunities to expand its expertise in these areas, and efforts are already under way to engage the broader academic and professional communities in addressing these critical issues. In fall 2012, the GSE launched a new course, coupled with a yearlong colloquium series, entitled Education's Digital Future (EDF). EDF brings Stanford students, faculty, and professionals together with local K-12 teachers, software developers, venture capitalists, and policy experts to study how digital education works and which models work best. Students work on team projects, with EDF functioning as an incubator of ideas. The course also addresses equity issues surrounding the digital revolution.

The school is planning to launch an analogous course and colloquium series in 2013/14 that focuses on issues related to poverty and education.

Another element of the strategic plan is the establishment of a GSE clinical practice. During the past decade, the GSE has greatly expanded its involvement in local schools. In addition to its decade long partnership with the East Palo Alto Academy Charter School, the GSE runs about two dozen research programs in the San Francisco Unified School District and has relationships with roughly 100 districts throughout the country. However, these relationships are typically with individual faculty members, and there is a pressing need to better coordinate such activities to address issues affecting schools. The GSE seeks to pilot a clinical practice that brings together faculty and professional leaders in collective problem solving, as well as increasing the production of practical knowledge.

In support of its new strategic direction, the school recently launched a robust and ambitious communications program. To improve dissemination of, and exposure to, the work of its faculty, the school hired its first communications

director and is investing funds in support of this new office. The goal of the communications office is to reinforce the GSE's standing as a unique professional graduate school of education that is producing scholarship to transform education today while training the education leaders of tomorrow. It also seeks to raise awareness of the work that is occurring at the GSE—its research, policy making, educator training, and education innovation and entrepreneurship—and the effect it is having on how people teach and learn.

# **Consolidated Budget Overview**

The 2013/14 GSE consolidated budget shows total revenues and operating transfers of \$57.1 million and expenses of \$56.8 million, with operating results of \$323,000. After projected transfers of \$1.1 million from endowment income to student loan funds, offset somewhat by an estimated \$500,000 of transfers from other assets for gift pledge payments, the school projects a deficit of about \$300,000. This slight deficit will be funded by accumulated reserves and represents an improvement over the \$1.0 million deficit projected for 2012/13. The GSE has recently launched several initiatives that were seed funded with school reserves. In 2013/14, additional revenues and transfers will cover many of those costs, but the school will continue to use reserves to fund some facilities renovations and to backstop shortfalls in graduate aid funding.

Designated, gift, and endowment revenues are all projected to increase moderately in 2013/14. Some new endowed gifts and pledge installments will boost endowment payout. Expendable gift income is expected to continue at the elevated level of the past couple of years.

Sponsored research revenue is projected to be flat in 2013/14. The school submitted a large number of federal proposals in late 2012; it's anticipated that some of these will come through, which hopefully will offset the impact of potential sequestration cuts.

Total expenses are expected to be flat in 2013/14, primarily due to the projected flat sponsored research. In addition, a significant increase in the number of faculty scheduled to be on sabbatical will affect the academic salary budget and the net general funds transfers to the school, as sabbatical salary savings are returned to the provost.

### **SCHOOL OF ENGINEERING**



[IN MILLIONS OF DOLLARS]			
	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	351.7	362.6	377.3
Expenses			
Salaries and Benefits	180.2	189.5	198.4
Non-Salary	149.4	154.3	159.9
Total Expenses	329.5	343.8	358.3
Operating Results	22.2	18.8	19.0
Transfers From (to) Endowment &			
Other Assets	(8.9)	(7.6)	(6.3)
Transfers From (to) Plant	0.0	(0.5)	(5.8)
Surplus / (Deficit)	13.2	10.8	6.8
Beginning Fund Balances	219.6	232.8	243.6
Ending Fund Balances	232.8	243.6	250.4

# **Programmatic Directions**

In 2012/13, the School of Engineering (SoE) began developing strategic plans to drive its direction over the next decade.

Online learning is an exciting component of these plans, and the school has been investing significant resources to further this opportunity. One department has begun exploring how to leverage online technology to offer some of its most popular classes each quarter, rather than just once a year, leading to smaller class sizes and more time for direct student-faculty interaction. Several professors are experimenting with the "flipped classroom" concept of mastery learning, where faculty knowledge transfer occurs outside of class time, providing opportunities to use class time to interactively engage students in reasoning and problem-solving exercises. Online courses also enable students to learn from afar, making it feasible for graduate students to take advantage of internships and for undergraduates to participate in Bing Overseas Studies programs.

Although other components of SoE's new strategic plans are still in flux, some are gaining considerable traction. One idea is building a broad-based research and teaching program in sustainable urban systems, possibly including a new graduate program to educate the next generation of architects,

engineers, and city builders. Given that a majority of the world's citizens will live in megacities within a few decades, SoE has a huge opportunity to think about how to create, operate, and sustain such cities.

One of the strategic directions is the creation of an "innovation foundry", which combines nanofabrication, computational design of new materials and structures, and a design-thinking approach to tackle important problems that require new materials for their solution.

Another focus of the strategic planning process is to establish the capacity to develop and use tools for large data sets, including large-scale socioeconomic data and genetic transcripts from huge public medical databases.

The school's practice has been to support as many strategic opportunities as possible using restricted or designated funds. Federal sponsors continue to commit incremental funds to support SoE research. Faculty and department leaders are also highly productive and resourceful in securing non-sponsored gift funds in support of their research initiatives. One of the great strengths of Engineering's research portfolio is the broad range of external funding agencies. This diversity gives the school some immunity from short-term ups and downs in specific government agencies, corporate sources, and individual gifts.

On the teaching front, the undergraduate Computer Science (CS) curriculum was completely revamped a few years ago, and the results are striking. Undergraduate CS majors have since doubled, and CS is now the second largest undergraduate major at Stanford, the first time any Engineering major has held that distinction. The percentage of women in our undergraduate CS program has likewise increased dramatically, and 90% of all Stanford undergraduates now take an introductory programming course.

The huge growth in the undergraduate CS major has been part of more general growth in undergraduate Engineering majors at Stanford. Engineering has seen a significant increase in the past four years, from 20% of Stanford undergraduates to 33%. While SoE is truly excited about this level of interest, this pace of growth challenges the school's operations in several ways. Classroom space is at capacity, administrative support is thin, teaching faculty loads are stretched, and teaching assistant budgets are exceeded.

# **Consolidated Budget Overview**

The 2013/14 consolidated budget forecast shows total revenues and operating transfers of \$377.3 million and expenses of \$358.3 million, with operating results of \$19.0 million. Reinvestment of unused payout in endowment principal and transfers to other assets, including plant, of \$12.1 million leave a projected surplus of \$6.8 million.

Revenue and expense in 2013/14 are projected to grow by roughly 4%, compared to the projections for 2012/13. These increases will principally be driven by growth in SoE's general funds allocation and sponsored research funding. The additional general funds will support teaching assistants' salaries and tuition, instrumentation in and start-up costs for the Bioengineering/Chemical Engineering (BioE/ ChemE) building in the Science and Engineering Quad 2 (SEQ 2), online learning initiatives, and several core academic programs such as the Student Model Shop, Stanford Technology Venture Program, and the Architectural Design Program. Sponsored research growth is projected at 4%, a figure adjusted downwards from earlier projections to factor in the negative impacts of sequestration. Transfers to plant include the school's remaining \$5.1 million share for instrumentation in the BioE/ChemE building.

Faculty, divisions, laboratories, and departments continue to control 44% of the designated fund and 74% of expendable gift balances. Substantial percentages of these funds are

earmarked for research. Endowment income fund purposes mainly focus on faculty and student support.

Separate from SoE's consolidated budget is an estimated \$68.4 million in reserves in SoE's venture capital investment fund, which was established more than 20 years ago. These funds are used for capital projects and matching gifts to endowment principal for endowed chair and graduate fellowships.

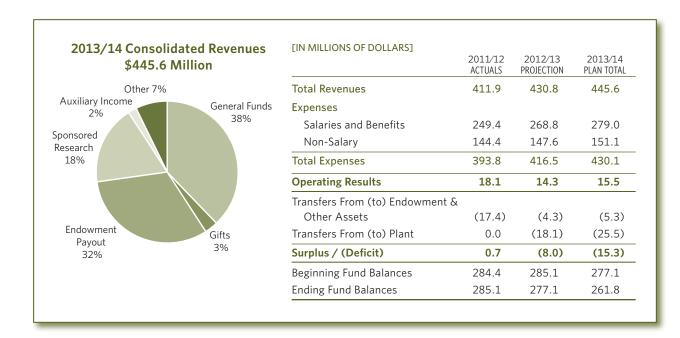
# **Capital Plan**

The new BioE/Chem building, the fourth and final building in SEQ 2, will be complete and ready for occupancy in the summer of 2014. Total costs for construction (including the building, connective elements and future fit-ups) are \$215.5 million of which SoE will be responsible for \$39 million. The school remains optimistic in terms of fundraising. BioE/ ChemE will be the future home for two currently dispersed and space-impacted departments: Chemical Engineering and Bioengineering. The lab-intensive structure facilitates the school's efforts to attract top faculty through the availability of modern teaching and research facilities; fosters SoE's strategic focus on interdisciplinary work; opens up space in the Clark Center so that new programs can be developed there; and vacates old buildings (Keck and Stauffer) so that other facilities in the university's master plan can be constructed. The School of Medicine will occupy 30% of the building when it is built.

The school is renovating Buildings 520/524 in the Panama Mall. Building 520, one of the 1900 era buildings on campus, originally served as the university's powerhouse. Building 524 was added in 1912. The goal is to return these historic buildings to their original open-space, interior architecture and to create a stimulating and collaborative environment. When complete, the project will co-locate and improve collaborations among three groups in Mechanical Engineering: BioMechanical, Mechanics and Computations, and Thermosciences.

The school is undertaking a major initiative to reinvent PhD student space. For years, SoE has furnished student space 'traditionally,' with cubes or small-shared offices that are not heavily utilized. The school has engaged the Steelcase Research Group and is conducting many student-led experiments in order to identify options that will result in optimal utilization of over 100,000 square feet of space for current and future PhD students.

### **SCHOOL OF HUMANITIES AND SCIENCES**



# **Programmatic Directions**

The School of Humanities & Sciences (H&S) has recovered from the recent economic crisis and continues to be in a strong financial and competitive position. During the past several years, the school has focused on strengthening faculty, improving graduate student selectivity, transforming arts programming, and creating more comprehensive global programs. H&S has moved aggressively to recruit a large number of faculty, reversing the net losses from the past few years and rebuilding strength in key programmatic areas, including senior experimental science positions that have been open for several years.

Yields on searches continue to be higher than normal, due in part to reduced competition from other universities still working through fallout from the economic crisis. Retention cases continue to be low, as do faculty exits. These combined factors have resulted in a 7% increase in faculty over the past two years, and faculty FTEs now total 541—the highest number ever. Faculty numbers may continue to grow somewhat from yields on searches already under way, but H&S plans to authorize new searches at replacement rates. This growth has created significant increases in one-time research commitments to new faculty (totaling \$30 million),

which will create additional draws on Dean's Office reserves during the next five years. Faculty growth has also increased burdens on administrative infrastructure and particularly space and facilities.

In the upcoming year, H&S will continue to focus on enhancing several key strategic areas. With the opening of the Bing Concert Hall, there are additional opportunities to grow fine arts programming. The school will continue with efforts to globalize the curriculum and to create opportunities for collaborative research across departments and schools. Most of this growth will be supported through additional fundraising.

The federal grant funding environment continues to be a major concern for the school. Grant and contract support has only kept pace with inflation for the past ten years, with small increases in academic salary support but decreases in graduate student support. H&S forecasts a 2.8% decline in federal support next year. The school will use Dean's Office, department, and faculty-controlled reserves to cover this increasing gap in the short term, prioritizing support for graduate student funding and non-salary research expenditures. Over the longer term, a more comprehensive and sustainable solution will be needed. Scientific infrastructure

has had the largest decrease in grant and contract support for the past several years, and faculty have increasingly requested funding from the Dean's Office. Beginning in 2013/14, the provost will provide \$500,000 of incremental base support for scientific infrastructure. Over the near term, this new funding, combined with matching Dean's Office resources, should help meet this growing need.

Support of graduate students also continues to be a concern for the school. Graduate enrollments have increased 8% during the past decade (decreasing 2% in the humanities, while increasing 12% in the natural sciences and 15% in the social sciences). Growth has been driven largely by new programs, such as International Policy Studies and Public Policy, and increased popularity of existing programs, such as East Asian Studies. Department-controlled graduate funding is unevenly spread across departments, creating surpluses in some areas while other departments have difficulty funding a minimum cohort. During the past two years the Dean's Office has taken increasingly aggressive action, withholding or reallocating cost rise for programs with large and growing balances. These reserved funds will be used to create a more flexible funding pool controlled by the Dean's Office.

# **Consolidated Budget Overview**

For 2013/14, H&S projects revenues and operating transfers of \$445.6 million and expenses of \$430.1 million, resulting in an operating surplus of \$15.5 million. After \$30.8 million of transfers to plant and capitalization of endowment payout, the school projects a \$15.3 million net use of accumulated balances. Dean's Office unrestricted reserves are projected to decrease by \$18.8 million to a total of \$37.0 million while restricted Dean's Office fund balances will reach \$50.1 million. Total department, program, and faculty fund balances are projected to increase by \$3.8 million to a total of \$174.7 million. It is important to note that the school continues to project small aggregate surpluses from ongoing inflows/outflows. The net use of reserves during 2013/14 represents a planned use of one-time accumulated reserves to support one-time capital projects.

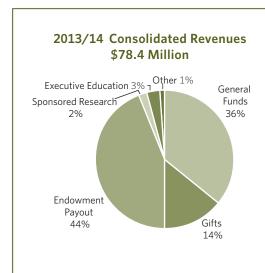
The use of school reserves is primarily for the McMurtry building construction project. This project will use \$15 million of reserves, and an additional \$30 million will serve as temporary bridge funding until donor gift payments are received. In 2012/13, some \$6 million of reserves will be expended and an additional \$12 million temporarily used. In 2013/14, another \$18 million will be temporarily used. The school has also committed an additional \$15 million of reserves to the upcoming Biology Research Building construction project; the 2013/14 projection reflects \$7.5 million of this. These projects will create a significant draw on school reserves during the near term, but if fundraising goals are met, the school projects that the \$30 million of bridge funding will be returned to reserves by the close of 2017/18.

The forecasted 2013/14 decline in federal grant and contract volume is projected to reduce revenues by \$2 million. Of this total, the decline in graduate student funding is approximately \$650,000 in real terms. Funding the student support gap will be a priority for the school, and reserves will be the primary funding source in the short term.

## **Capital Plan**

H&S is embarking on the largest capital construction program since the school's founding in 1948. Following the recent completion of the Bing Concert Hall, the next project is the 100,000 square foot McMurtry Building. McMurtry will house the Art and Art History Department along with associated art teaching classrooms. Construction has commenced and has a projected opening date of summer 2015. In addition, H&S will begin design work on the 108,500-square-foot Biology Research Building and the 74,000-square-foot Teaching Labs & Learning Center (Old Chemistry) renovation. The project includes instructional labs, lecture rooms and science library space. The two new science buildings will anchor a revitalized Biology/ Chemistry Science Quad. In addition, H&S was selected as the recipient of the Solar Decathlon house to be located at Jasper Ridge. Finally, H&S will begin the full renovation of Roble Gym to accommodate drama, dance, and other programs.

### **SCHOOL OF LAW**



2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
72.7	75.1	78.4
43.5	48.9	52.0
20.8	21.2	22.3
64.3	70.1	74.3
8.4	5.0	4.1
(8.0)	(4.5)	(3.3)
0.0	(0.4)	(0.7)
0.4	0.1	0.1
21.6	21.9	22.0
21.9	22.0	22.1
	ACTUALS 72.7 43.5 20.8 64.3 8.4 (8.0) 0.0 0.4 21.6	ACTUALS PROJECTION 72.7 75.1  43.5 48.9 20.8 21.2 64.3 70.1  8.4 5.0  (8.0) (4.5) 0.0 (0.4)  0.4 0.1  21.6 21.9

# **Programmatic Directions**

The priorities for Stanford Law School (SLS) for 2013/14 are recruiting and retaining faculty, helping its students navigate the public-sector job market, ensuring its curriculum keeps pace with changing market needs, and continuing to raise funds to support academic programs and initiatives.

Faculty recruitment and retention continues to be an important focus. To attract and retain talented faculty, SLS must have the necessary resources to offer packages competitive with those of peer schools. Additional general funds have been allocated to the law school in 2013/14 to address this issue.

SLS students who seek legal work in government or non-profits face a very difficult market. Federal and state governments remain cash strapped, and the nonprofit sector continues to suffer as a result of decreased funding. SLS is providing additional assistance, such as career counseling and job-seeking services from its John and Terry Levin Center for Public Service and Public Interest Law. In addition, SLS provides financial aid to students who want to pursue public interest careers and provides graduates with loan forgiveness through the Miles and Nancy Rubin Loan Repayment Assistance Program.

SLS faculty members are considering two new curricular initiatives. The first is to improve the academic program to better prepare students for the practice of global economic law. Nearly all SLS graduates who practice in the private sector will be involved in global practice, and providing an academic program that prepares students for this reality is a challenge for every law school. The second initiative is aimed at increasing opportunities for law students to work with faculty on policy-relevant projects. Many SLS graduates will, throughout their careers, advocate for, design, analyze, or implement public policy. SLS is exploring this model through pilot projects directed by faculty. The school is also seeking ways to involve other parts of the university in this effort.

Fundraising continues to focus on clinical education and financial aid. Clinical education is a crown jewel of the academic program, and the school is committed to increasing endowment funds to assure its long-term strength. For the past three years in the budget process, SLS has expressed concern about its ability to continue to offer generous and competitive financial aid and has received additional general funds to support that need. The combination of incremental base general fund support, successful fundraising, and care-

fully vetted policy changes have placed the law school's financial aid program on solid footing going forward.

# **Consolidated Budget Overview**

The SLS 2013/14 consolidated budget shows total revenues and operating transfers of \$78.4 million and expenses of \$74.3 million, yielding an operating result of \$4.1 million. After projected transfers to assets of \$4.0 million (\$2.5 million transferred to student loan funds to cover SLS Loan Repayment Assistance Program obligations, \$750,000 reinvested into funds functioning as endowment, and \$750,000 transferred to plant for the Crown Quadrangle renovation), the school projects a net consolidated surplus of \$100,000.

Endowment income is scheduled to increase by approximately 5%, to \$34.7 million. This increase is due to previous years' fundraising success and the school's ability to reinvest funds into funds functioning as endowment. Grants and contracts revenue will grow by more than 20%, to \$1.7 million, as a result of the law school's largest-ever sponsored project award: a \$7.2 million, multiyear grant by the Department of State to support the Afghanistan Legal Education Project (ALEP). As a result of the collaboration with SLS, ALEP has developed a curriculum, including textbooks, for a new legal studies certificate that will be granted by the American University in Afghanistan.

In 2013/14, consolidated expenses are projected to grow by almost 6%. Compensation and non-compensation expense growth rates will be similar. Like sonsored revenue, sponsored research expenses will grow by 20%. Other contributing factors in expense growth are additions to the SLS faculty, increased academic activities in the legal clinics and research centers, and the filling of vacant staff positions.

SLS consolidated fund balances will grow by \$100,000 to \$22.1 million. Of this balance, \$12.1 million is classified as non-cash investments (and therefore not available for use). The \$10 million available balance comprises \$7 million for restricted purposes, such as academic programs, centers, and financial aid, and \$3 million for unrestricted purposes.

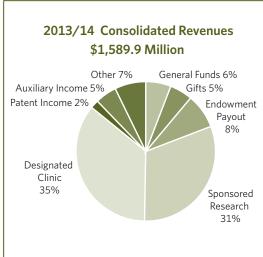
## **Capital Plan**

Over the past year, SLS capital planning efforts have focused primarily on the final piece of the law school buildings master plan, the Crown Quadrangle. SLS has developed a phased strategy that will meet the school's academic and administrative needs.

The Crown renovation is expected to cost \$22.0 million and encompass all four floors. It will be completed in three phases. Phase One (\$15 million; 34,000 square feet) will include the entire third floor and the lobby connecting all four floors. Construction is scheduled to commence in June 2013. A major challenge of this project will be to continue uninterrupted operations of the law school; this will mean curtailing construction during critical times of the academic year.

SLS is also undertaking a smaller capital project. Its Community Law Clinic is located in rented space in East Palo Alto. This location is critical because the clinic's client base lives in or near that community. In recent years, growth in this clinic's profile and significance has resulted in larger enrollment. Space intended to hold ten part-time law students now is accommodating an additional fifteen full-time students. The existing space is not adequate for the current population of faculty, staff, students, and clients. It will be remodeled in the summer of 2013, at an estimated cost of \$100,000.

### **SCHOOL OF MEDICINE**



[IN MILLIONS OF DOLLARS]			
	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	1,472.4	1,533.3	1,589.9
Expenses			
Salaries and Benefits	821.1	863.4	921.3
Non-Salary	581.9	598.7	595.8
Total Expenses	1,403.0	1,462.1	1,517.1
Operating Results	69.3	71.2	72.8
Transfers From (to) Endowment	&		
Other Assets	(9.9)	(21.2)	(10.1)
Transfers From (to) Plant	(18.6)	(10.2)	(13.0)
Surplus / (Deficit)	40.8	39.8	49.7
Beginning Fund Balances	572.8	613.5	653.3
Ending Fund Balances	613.5	653.3	703.0

# **Programmatic Directions**

The School of Medicine is engaged in a lively discourse about the future of Stanford Medicine. The challenges in academic medicine today are daunting. Society is demanding more—more value in health care, more scientific breakthroughs, more physicians ready for a rapidly changing health care delivery and discovery environment. And yet these growing challenges must be faced with fewer and fewer resources. While many in academic medicine are hunkering down, the school's faculty and students are passionately pressing forward.

Dean Lloyd Minor officially took over as dean of the School of Medicine on December 1, 2012. The new dean spent the fall months at Stanford before his appointment date getting acquainted with the people and issues in the school.

The evolution of excellence in education, research, and patient care to better serve Stanford Medicine's communities, locally and globally, continues. As the school considers its future, it is guided by three key priorities, shared by the dean with a school Town Hall audience in February 2013: advancing innovation, training leaders, and transforming patient care.

Innovation is about the good ideas that change the world. The school's scientists are exceptionally creative. Last fall,

when the National Institutes of Health announced funding for its High Risk-High Reward program, researchers at Stanford received more awards than those at any other institution. But in a tough funding climate, all have to work harder to attract and retain the most innovative faculty and students and give them the time and freedom they need to pursue the visionary science that can transform lives. The school is also beginning the design of a state-of-the-art facility that will foster creativity and collaboration and will bring genetics, neurology, and other research programs together to fully support the vision and talent of leading scientists in these fields.

If advancing innovation is in the blood of the school, training leaders is the legacy to future generations. At Stanford, the educational experience should be the best it can be, with integrated training opportunities for medical students, graduate students, postdoctoral fellows, residents, and clinical fellows. As leaders in online education, the school will share its interactive tools broadly with its peers so that both medical education and continuing medical education can be transformed, not just at Stanford but at schools across the country.

Last, but not least, patient care will be transformed by bringing the very best science to the treatment and prevention of disease, by focusing on the health and well-being of each patient who receives care through the Stanford Medicine system, and by communicating the knowledge and advances the school has garnered to others so that Stanford Medicine is a leader in the transformation of health care. One program for transforming patient care is the Clinical Excellence Research Center, which brings together world-class leaders from fields including medicine, bioscience, computer science, engineering, design, law, and business to develop the most efficient, economical, and equitable approaches to health care delivery. Future investments in bioinformatics will deliver new treatments and cures, involve patients as full partners in their health care, and reimagine the limits of medicine.

# **Consolidated Budget Overview**

The school projects total revenues and operating transfers of \$1,589.9 million in 2013/14 and expenses of \$1,517.1 million, yielding a surplus from operations of \$72.8 million. After transfers of \$23.1 million to endowment principal and plant funds, the school projects a net change in current funds of \$49.7 million.

#### Revenues

Revenues and operating transfers are projected to increase from \$1,533.3 million in 2012/13 to \$1,589.9 million in 2013/14 (3.7%). Key drivers include the following:

- Healthcare services revenue will increase by 5.8%, primarily driven by funds flow agreements between the school and the two hospitals, Stanford Hospital and Clinics (SHC) and Lucile Packard Children's Hospital (LPCH). Stanford faculty provide approximately 84% of patient care at SHC and 96% of pediatric (non-OB/GYN) care at LPCH. The hospital payments for these efforts are based on the national median benchmark for specialty-specific compensation rates per work Relative Value Unit (RVU). Work RVUs are measurements of clinical activity by the school's faculty at each hospital. For 2013/14, the national benchmark survey from Medical Group Management Association projects flat or slightly declining compensation rates per work RVU.
- The expendable funds pool is projected to pay out \$28.2 million at 5.5% in 2013/14, compared to \$16.1 million in 2012/13, when the prior-year return was only 2.9%.
- Incremental faculty and higher trending in non-federal research drive a slight 1.6% sponsored research increase.

 Gift and endowment income are projected to grow 2.9% and 4.1%, respectively, reflecting a modest influx of new gifts.

#### **Expenses**

Expenses are projected to increase 3.8%, or \$55.0 million, from 2012/13 to 2013/14. Major components of the increase are:

- The projected net recruitment of 32 faculty: 15 in the university tenure line, 15 in the medical center line, and 2 in the non-tenure line. This leads to a \$29.6 million increase in annual compensation for faculty, other clinicians, and staff, primarily due to the salary program, incremental recruitments, and clinical program growth;
- Increases in operation, maintenance, and utilities expenses, primarily driven by double-digit percentage rate increases for chilled water and steam, additional leased properties, and occupancy of the Comparative Medicine Pavilion;
- Increases in debt service because of debt-funded leased properties, the Jill and John Freidenrich Center for Translational Research, and the Comparative Medicine Pavilion; and

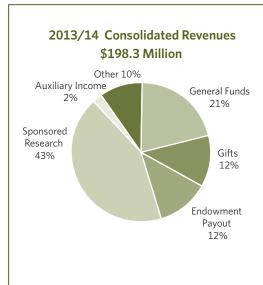
#### Transfers to Plant, Endowment, and Other Assets

The projected transfers to plant of \$13.0 million include \$2.6 million for research animal facilities rehabilitation projects, \$1.6 million for site planning for off-campus leased properties at Porter Drive, and \$6.2 million for strategic and maintenance capital projects. Transfers to other assets include departments' projected \$10.1 million transfer to funds functioning as endowment.

#### **Capital Plan**

The 31,000 gross-square-foot C.J. Huang Building (future home of the Asian Liver Center) at 780 Welch Road is planned to begin construction in spring 2013. It is estimated to cost \$23.2 million and to open in fall 2014. Beginning in November 2013, two research animal facilities will be rehabilitated with new flooring and electrical distribution to support ventilated cages and HVAC system replacement. The 80,000 gross-square-foot renovation work will be completed in December 2014 with occupancy in February 2015.

### VICE PROVOST AND DEAN OF RESEARCH



[IN MILLIONS OF DOLLARS]			
	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	196.8	190.6	198.3
Expenses			
Salaries and Benefits	100.8	105.4	111.0
Non-Salary	89.4	90.5	94.5
Total Expenses	190.2	195.9	205.5
Operating Results	6.6	(5.3)	(7.2)
Transfers From (to) Endowment &			
Other Assets	8.1	3.8	5.0
Transfers From (to) Plant	0.0	0.0	0.0
Surplus / (Deficit)	14.7	(1.5)	(2.1)
Beginning Fund Balances	118.5	133.2	131.7
Ending Fund Balances	133.2	131.7	129.6

The Office of the Vice Provost and Dean of Research (DoR) is responsible for research policies and facilitation of faculty research and scholarship across all of the schools and departments. It has oversight of eighteen independent laboratories, institutes, and centers and manages the compliance and administrative offices that support research. DoR also oversees major shared facilities that support a broad range of research and scholarly activities.

# **Programmatic Directions**

The primary strategic goal of DoR is to support faculty competitiveness in research and scholarship, which is particularly important as obtaining extramural funding becomes more challenging. This goal will be pursued through three program objectives in 2013/14:

- Creating opportunities for interdisciplinary research through the independent laboratories, institutes, and centers
- Providing state-of-the-art shared facilities
- Minimizing burdens of compliance and administration for faculty and staff

The eighteen independent laboratories, institutes, and centers complement the departments and schools by providing intellectual and physical environments for research that

invite scientific and scholarly dialogue and enhance collaborations among faculty from many disciplines.

DoR facilitates the advancement of new research areas and invests in critical infrastructure to ensure research competitiveness. The following are four of DoR's 2013/14 program priorities.

- One emerging area is research at the intersection of the physical sciences and biology and biomedical sciences. In this context, a new Stanford Institute for Chemical Biology has been created in partnership with the Schools of Medicine, Engineering, and Humanities & Sciences. Its mission is to strengthen the chemical foundations of biomedical science and accelerate molecular discoveries that can transform human health.
- DoR is developing a university-wide neurosciences institute. It will serve as the interdisciplinary focal point for the estimated 400 faculty members who are working to unlock the secrets of the brain, including faculty in behavioral neuroscience, biology, business, chemistry, medicine, neuroeconomics, neurology, psychiatry, and psychology.
- The SLAC-related independent institutes remain a high priority. Maintaining and enhancing interactions between the main campus and SLAC National Accelerator Laboratory is very important for research competitive-

ness, allowing access to remarkable scientific tools, graduate student research opportunities, and joint recruitment of faculty.

Launching the \$41.2 million Stanford Research Computing Facility, to be completed in early 2014, is an important program goal. Advances in the theoretical and computational sciences are revolutionizing all fields of research, and the availability of high performance computing infrastructure is essential for individual faculty and university competitiveness.

DoR is continuing to explore new initiatives to connect researchers to each other, the larger research community, and the world. The Community Academic Profile (CAP), developed at the School of Medicine, is being expanded university-wide. CAP will create a consistent framework for Stanford faculty and staff profiles, with the capacity for automated publication updates, and enhance collaborations through secure social networking capacities. The Worldview at Stanford program, to be launched in 2013/14, will engage decision makers in companies, governments, and nonprofit organizations with Stanford's thought leaders. This program will use online content and campus-based experiences to engage professionals grappling with emerging strategic challenges such as climate change, new insights about the brain and decision making, and the ramifications of a globalized world.

Faculty research programs in the sciences require extremely costly and highly specialized instruments and facilities that cannot be funded or maintained by individual investigators. Such facilities are critical for faculty competitiveness, especially as federal research budgets decline. DoR works with faculty leaders in prioritizing the purchase of instruments to optimize use of capital funds and arrange their colocation for efficiencies of access by faculty and students, maintenance, and space use. Stanford investigators now have state-of-the-art shared facilities for science at the nanoscale due to recent investments in equipment and new and renovated space. Optimizing management of all shared facilities, including broadening the user base, is a DoR priority. One of DoR's strategies is to provide seed funding for proof-ofconcept experiments that can enable faculty to compete for extramural grants. This is particularly beneficial to new and junior faculty. In 2013/14 seed funding will be distributed to encourage researchers in varying disciplines to use the Stanford Nano Shared Facilities, the Stanford University Mass Spectrometry facility, and the Center for Cognitive and Neurobiological Imaging.

Regulations that govern research are increasingly burdensome. DoR strives to maintain the high-quality compliance programs necessary to protect faculty, students, and staff who use university facilities and to manage institutional risk. DoR is pursuing several initiatives to mitigate impacts on research productivity, including a review of Stanford's research administration policies to find ways of reducing faculty and staff burden while maintaining compliance with federal regulations. DoR, along with other university offices, will continue to actively participate in national initiatives and organizations that strive to simplify federal research regulations in 2013/14.

## **Consolidated Budget Overview**

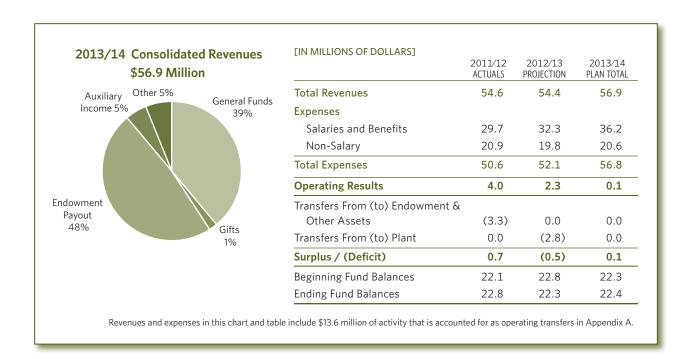
The 2013/14 consolidated budget for DoR shows total revenues and operating transfer of \$198.3 million and expenses of \$205.5 million, resulting in an operating deficit of \$7.2 million. However, after estimated transfers of \$5 million from endowment, primarily for the Woods Institute for the Environment's Center for Ocean Solutions, the net deficit will be \$2.1 million. This is a planned use of reserves in the Precourt Institute for Energy, Freeman Spogli Institute for International Studies, and Environmental Health and Safety.

Total revenues in 2013/14 are projected to increase by \$7.7 million, or 4.0%, from 2012/13, due principally to a 3.6% increase in sponsored research funding. Despite the concern over federal funding sequestration, the independent laboratories, institutes, and centers continue to receive extramural funding. Other internal income is expected to increase 5.7% over 2012/13, primarily due to continued growth in use of the shared facilities and increased activity at the Stanford Center at Peking University.

Total expenses in 2013/14 are projected to increase by \$9.6 million, or 4.9%, due to the launching of the Stanford Institute for Chemical Biology, the Neurosciences Institute, and Worldview at Stanford. The shared facilities also project program growth as they improve access to costly scientific instruments and provide education about their use in the research community.

Faculty and the independent labs, institutes, and centers control 85% of DoR fund balances. Endowment and expendable funds are mainly focused on multiyear, multidisciplinary research programs, and some of these funds are expected to provide bridge funds for research programs if sponsored research funding declines due to sequestration.

### VICE PROVOST FOR UNDERGRADUATE EDUCATION



# **Programmatic Directions**

Implementation of the Study of Undergraduate Education at Stanford (SUES) recommendations continues to drive much of the activity in the Office of the Vice Provost for Undergraduate Education (VPUE), and this work progresses in stages. The two significant changes to the undergraduate general education requirements mandated by the Faculty Senate in the spring of 2012 laid out a critical set of deadlines for VPUE. After two quarters, the Thinking Matters program appears to be off to a strong start, although significant refinements are anticipated based on assessments of this first year. Beginning in autumn 2013, the class of 2017 will fall under the new Ways of Thinking, Ways of Doing (WAYS) breadth requirements, and a VPUE-sponsored, faculty-led committee has begun reviewing the curriculum in partnership with departments to ensure this system is in place in time. VPUE is committed to aligning program design and implementation, policies, and communications to help effect the shifts in student and faculty culture necessary to realize fully the vision of undergraduate education articulated in the SUES report.

The most immediate and obvious impacts of the SUES recommendations are the redefined general education requirements, including Thinking Matters and the WAYS

breadth system. In addition, the report urged Stanford to think carefully about how to best structure and scaffold students' college experience, beginning with the freshman year. These emphases dovetail with VPUE's long-standing interest in partnering with departments to support introductory courses in a variety of fields, some of which become de facto general education courses because they serve such a large portion of the undergraduate population.

In 2013/14, VPUE will reduce the number of Thinking Matters courses from 35 to 27 to achieve a targeted minimum of 60 students per course. At the same time, the number of introductory seminars available exclusively to freshmen will increase by eleven in some of the most high-demand areas, including the sciences and social sciences. VPUE will also partner with departments to support service courses that serve broad segments of undergraduates. The Mathematics Department will receive additional support because of the increased enrollments in one of the introductory calculus series, and the Computer Science Department will get support for the first time to manage the high enrollments in introductory computer science courses.

The transition from the disciplinary-based breadth model to the WAYS capacity-based breadth model is under way in strong partnership with departments and the registrar's office. The class of 2017 will begin to satisfy some of these requirements in 2013/14 and will have four years to complete eleven courses in the eight WAYS categories. For the three years until the class of 2016 graduates, the two systems will coexist. For courses to fulfill a WAY, they must be certified, and VPUE was charged with creating and maintaining a governance structure to approve courses as meeting the aims of each WAY. The resulting Breadth Governance Board launched its efforts in fall 2012; these include articulating descriptions and learning goals for the WAYS, communicating with faculty and departments, and developing and implementing a review process for courses. The board anticipates having over 800 courses certified to begin the autumn 2013 quarter.

Although existing courses are available to students in each WAY, faculty leadership anticipates capacity constraints in the Ethical Reasoning and Creative Expression categories. To help build capacity in Creative Expression, VPUE is partnering with Music, Art, Creative Writing, and Theater and Performance Studies to increase the supply of courses in high-demand areas. Similarly, VPUE is partnering with the Ethics in Society program to help faculty develop new applied ethics courses in a variety of disciplines to meet demand in Ethical Reasoning.

Moving beyond required courses, VPUE is piloting several new programs conceived of by SUES or in subsequent campus discussions about the report. These include two new yearlong Integrated Learning Environments (ILEs), which are residentially based programs for freshmen. These two ILEs, Immersion in the Arts, Living in Culture (ITALIC) and Science in the Making Integrated Learning Environment (SIMILE), will be options for incoming students beginning in autumn 2013. In addition, VPUE is partnering with the design program to offer sophomores a new course entitled Designing Your Stanford that is derived from the highly successful Designing Your Life course. In collaboration with the School of Humanities & Sciences and the Haas Center, VPUE will hire three directors of community-engaged learning who will help faculty integrate community-based learning into their courses. Based on another SUES recommendation, VPUE will encourage student-initiated capstone experiences by offering senior synthesis grants to students who propose projects that integrate more than one element of their undergraduate studies.

SUES prescribed an evolution of Stanford's undergraduate education, not a wholesale reconstruction. Still, the

changes will substantially affect the campus well beyond VPUE. Implementation has been rapid on some fronts and more deliberate on others, but it has been thoughtful and collaborative in all cases. While the class of 2017 will be the first to experience the full breadth of the new requirements, all classes will continue to enjoy the results of Stanford's education innovations.

## **Consolidated Budget Overview**

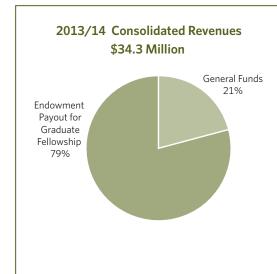
VPUE projects a balanced budget with revenues and operating transfers of \$56.9 million and expenses of \$56.8 million in 2013/14. Revenue increases of \$2.5 million, or 4.6%, are from endowment payout as well as support for several pilot programs from the university budget group and the Stanford Fund. Expense increases of \$4.8 million, or 9.1%, are due to the program expansions described previously and program development costs stemming from changes recommended by SUES, but programmatic savings have mitigated this growth. VPUE realized over \$1 million in savings in the transition from the three-quarter Introduction to the Humanities requirement to the one-quarter Thinking Matters requirement and reallocated those savings over several new programs.

VPUE remains exposed to currency exchange rate risk because most of the Bing Overseas Study Program (BOSP) overseas centers' activities are carried out in local currency that is subject to varying exchange rates. With a large capital project scheduled to begin in 2013/14 in England, VPUE will have additional currency risk with relation to the pound sterling.

# **Capital Plan**

The BOSP center in Oxford, England, is located in Stanford House. The building houses up to 45 students each quarter and also includes staff office space, housing for Stanford faculty in residence, and classroom and programmatic space. VPUE plans a significant \$4 million renovation that will upgrade student living spaces and improve other programmatic aspects of the house, including making the facilities accessible for those who are mobility impaired. Design and permitting for this historically listed building will take place during academic year 2013/14, and construction is scheduled to begin in the summer of 2014 and continue into the following fiscal year. BOSP is evaluating options to continue or suspend the program during construction.

### VICE PROVOST FOR GRADUATE EDUCATION



2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
32.3	34.3	34.3
2.0	2.5	2.6
25.2	28.6	33.9
0.9	1.3	1.4
28.1	32.4	37.8
4.2	1.9	(3.5)
(0.5)	(0.3)	(0.2)
0.0	0.0	0.0
3.7	1.6	(3.7)
46.2	49.8	51.4
49.8	51.4	47.7
	ACTUALS 32.3 2.0 25.2 0.9 28.1 4.2 (0.5) 0.0 3.7 46.2	ACTUALS PROJECTION  32.3 34.3  2.0 2.5 25.2 28.6 0.9 1.3 28.1 32.4  4.2 1.9  (0.5) (0.3) 0.0 0.0  3.7 1.6  46.2 49.8

Revenues and expenses in this chart and table include \$30.7 million of activity that is accounted for as operating transfers in Appendix A

# **Programmatic Directions**

The Vice Provost for Graduate Education (VPGE) continues to play a key leadership role, working collaboratively across the university's seven schools, to enhance the quality of graduate education for almost 9,000 students pursuing degrees in 90 degree programs and departments. VPGE's top priority is to address three critical university priorities: advancing diversity, facilitating cross-school learning, and fostering innovation to strengthen the quality of graduate programs.

Stability in funding sources for graduate students remains a major priority across the university. The total funds for graduate student financial support reached a high of \$309 million in 2011/12, with 27% coming from external grants and contracts, 43% from designated and restricted funds, and 30% from general and school funds.

VPGE contributes about 10% of the above total, mostly in the form of doctoral fellowships (full tuition and stipend) paid from one of six VPGE-administered fellowship programs. The largest of these is the Stanford Graduate Fellowships (SGF) Program in Science and Engineering, used to attract the best students in the world to doctoral

study at Stanford. The Stanford Interdisciplinary Graduate Fellowships (SIGFs) are awarded to students who pursue groundbreaking research questions that span several disciplines, serving as intellectual magnets drawing together faculty from across the university. The program has gained momentum, as 54 of an intended 100 fellowships have been raised to date. SIGFs are often preparing for uncharted career paths, since their interests span research that is done in academia, industry, government, and nonprofit arenas. Fellows who have recently graduated are securing prestigious appointments as postdoctoral fellows, assistant professors, or policy analysts. Their impact is likely to be farreaching, as they advance new lines of inquiry and inspire others who work alongside them.

With the goal of diversifying the academic pipeline, VPGE supplements school activities and develops university-wide programs for recruiting, enhancing the educational experience of current students, and cultivating interest in academic careers. The largest investment in this priority area goes to the direct funding of doctoral students through Diversifying Academia, Recruiting Excellence (DARE) fellowships, Center for Comparative Studies in Race and Ethnicity fellowships, and small research opportunity grants

for the study of diversity. The most visible change this past year is the expansion of the DARE Doctoral Fellowship Program to a new cohort size of 20 fellows, for a total of 78 since DARE's 2008 inception and over 100 faculty involved in mentoring. This program awards two-year fellowship to Stanford doctoral students in their final two years who want to investigate and prepare for academic careers and whose presence will help diversity, broadly defined, in the professoriate. DARE survey results demonstrate that the program is positively impacting fellows' knowledge, skills, and confidence.

The most visible interdisciplinary program is the Stanford Graduate Summer Institute (SGSI), which offers free, noncredit courses in September. Now in its seventh year, SGSI has expanded beyond academic subjects to offer skills-based courses. Last summer 282 students participated in eight SGSI courses. Another opportunity is 12@12 faculty-led monthly lunches with diverse groups of students. These programs foster cross-disciplinary learning, help students build networks, reduce isolation, and better prepare them for work in interdisciplinary teams.

VPGE expands the opportunities for graduate students to explore beyond their disciplines to better prepare for their careers after graduation. These programs enable students to engage in cross-disciplinary dialogues and establish more extensive intellectual ties across schools as well as professional networks beyond their academic specializations.

A second director of educational programs was hired last year to further broaden the impact of the programs in the Graduate Professional Development portfolio. Programs cover a broad array of topics (time management, self-management, presentation skills) in a wide range of formats (workshops, lectures, short courses, dinners). Programs and activities are designed with utmost respect for students' time, so as not to detract from their academic commitments. Whether attending a one-hour Quick Bytes session at lunch or a one-week interdisciplinary course in September, students report a renewed sense of purpose, greater ability to focus and manage their time, increased confidence that they can achieve their academic goals, and reduced stress.

VPGE continues to provide resources to faculty and students in graduate degree programs for academic innovation and improvement in educational practices. The SCORE (Strengthening the Core) Innovation Fund helps departments respond to changes within their disciplines and in the emerging educational needs of their graduate students. SCORE projects have been expanded to include course development. Past faculty projects range from support for teaching assistants to whole-department curriculum redesign. Student Projects for Intellectual Community Enhancement is an innovation fund enabling students to undertake projects to expand and sustain the intellectual community of their department or field of study.

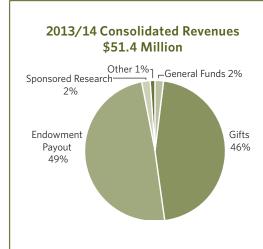
## **Consolidated Budget Overview**

VPGE projects revenues of \$34.3 million for 2013/14. Expenses and funds transferred to schools for graduate student funding are expected to be \$37.8 million, for a deficit of \$3.5 million. This planned use of reserves for SGF fellowships decreases the overall fund balance to \$47.7 million for 2013/14 from \$51.4 million in 2012/13.

Of the \$47.7 million fund balance, \$30 million is endowment income restricted to graduate student funding. The greatest portion is restricted to the SGF program. Since 2008/09, the number of fellows has increased, and since 2010/11, expenses have been greater than payout income. While the larger SGF program has been decreasing its fund balance over the last few years, SIGF program income has increased and held the total endowment balance constant. That will end in 2013/14. The number of fellows has been and will continue to be increased with the intent to draw down the endowment fund balance to \$15 million by 2015/16. Expenses for 2013/14 will increase by 15% and the number of fellows by 7% over 2012/13. The goal is to fund a steadystate number of fellowships through the yearly payout and maintain a reserve to cover unanticipated fluctuations. The remainder of the fund balance is less restricted and will be used to expand pilot programs in priority areas and to maintain a reserve for responding to emerging needs.

The 2013/14 consolidated expense budget for VPGE comprises 90% direct graduate student support, 7% compensation and benefits, and 3% programmatic non-compensation expenses. As VPGE's graduate student funding increases from \$26.3 million in 2012/13 to \$30.7 million in 2013/14, compensation and non-compensation expenses remain steady at \$2.6 million and \$1.4 million, respectively. Over the next few years, VPGE's operational expense rate will remain stable and funding to graduate students will continue to increase.

### **HOOVER INSTITUTION**



[IN MILLIONS OF DOLLARS]			
	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	45.6	48.1	51.4
Expenses			
Salaries and Benefits	29.8	31.0	33.0
Non-Salary	15.2	15.5	16.2
Total Expenses	45.0	46.5	49.2
Operating Results	0.6	1.6	2.2
Transfers From (to) Endowment &			
Other Assets	(2.2)	(2.5)	(3.2)
Transfers From (to) Plant	0.0	(1.3)	0.0
Surplus / (Deficit)	(1.6)	(2.2)	(1.0)
Beginning Fund Balances	40.2	38.6	36.4
Ending Fund Balances	38.6	36.4	35.4

# **Programmatic Directions**

The Hoover Institution, a public policy research center with a prestigious library and archives, is a unique contributor to the marketplace of ideas. It focuses on the principles of individual, economic, and political freedom, as well as private enterprise and representative government. In short, the Hoover Institution generates ideas defining a free society.

The institution is well positioned for fiscal year 2013/14 and will continue to invest in strategic priorities. Recruiting senior scholars is a top priority. Hoover aims to add one to two new senior fellows each year, supplemented with term and visiting appointments to facilitate collaboration on projects and topics aligned with the priorities of the existing resident fellowship.

New scholars are expected to engage collaboratively. Hoover has developed a number of scholarly teams that focus on synthesizing current thinking, offering new perspectives, and conveying research results to a broad constituency within defined areas of public policy. The teams consist of scholars from Hoover, other academic units within Stanford, and the broader community of public intellectuals, focused on specific policy topics. The collaborative nature of the work leverages the resident fellowship and multiplies research output in a relevant and timely fashion. To complement existing groups working in areas such as

education, economic policy, health care policy, national security and law, property rights, and energy policy, Hoover has added new initiatives that will focus on immigration policy as well as military history and contemporary conflict.

Following the recent appointment of a new director of its library and archives, Hoover continues to evaluate the library and archives' contribution to the research and educational mission of the institution and the university as well as their role as an archive for important historical material. The library and archives collect material broadly, focused on the themes of war, revolution, and peace. Collecting activities continue to shift from ephemera to digital media, and preservation norms are shifting towards digital formats as well. These trends necessitate further evaluation of the collecting scope and philosophy, which will be a priority of the new director of the library and archives. Digital collecting will also require accelerated investments in digital storage and information technology, and Hoover includes these additional expenses as part of its budget plan for the coming year.

In addition to its role as a research center, Hoover seeks to serve as an educator on public policy, disseminating the ideas and research of its scholars to the public at large. Hoover will expand its efforts to disseminate material through a variety of channels in 2013/14 and plans to

redesign its website, providing a consolidated repository for its research, online journals, blogs, and podcasts.

Hoover fellows have shown increasing interest in promoting the educational and research mission of Hoover more broadly. Individuals actively engaged in the formulation of policy at both federal and state levels have long sought the advice of Hoover fellows. Hoover's Leadership Forum now coordinates these activities and inquiries, inviting policy leaders to spend time with Hoover scholars to discuss specific policy challenges. This program will continue to grow in 2013/14 with roundtable discussions with individual leaders, as well as organized colloquiums involving leaders from different branches of government.

With the growing interest of fellows in interacting with policy experts in the U.S. capital and scholars based on the east coast, Hoover anticipates an expansion of its existing operations and new office space in Washington, D.C. The expansion is not envisioned as a means of supporting D.C. resident fellows; rather, it will support fellows visiting the capital by providing offices and facilities for meetings, small workshops, and policy briefings. Public affairs staff will be available to coordinate the activities of the scholars and provide liaison with the local policy and scholarly communities as well as the media.

Hoover will also be investing in a couple of new approaches to online education. The Numbers Game is a "chartcast" series combining animated charts, tables, graphics, and cartoons with audio intended to render complex economic concepts more easily understandable and accessible to a broad audience. Over the next several years, the compilation of Numbers Game episodes will be viewed as a multichapter media-rich "online economics textbook."

Strategika is a new online platform focusing on issues of national security and current crises. It will aim to provide educators with prepackaged lessons complete with discussion questions, suggestions for further reading, background history, and current analyses with alternative points of view.

## **Consolidated Budget Overview**

For 2013/14, the Hoover Institution projects total revenues and operating transfers of \$51.4 million and total expenses of \$49.2 million, yielding an operating surplus of \$2.2 million. After a planned \$3.2 million transfer to the capital facilities fund, fund balances will decline by \$1 million to \$35.4 million.

Revenues are projected to increase \$3.3 million, or 6.9%, from 2012/13 to 2013/14. Endowment income is expected to grow 3.7%, including the payout on new endowment gifts and transfers. Ongoing expendable giving is expected to grow 4%. However, anticipated one-time pledged gifts of more than \$1.5 million to support initiatives listed above such as the Washington, D.C. expansion will result in total gift growth of 10.8%.

Tracking with revenue growth, expenses are expected to grow by \$2.7 million, or 5.7%. One new FTE senior fellow appointment is anticipated next year, with additional appointments expected in future fiscal years. New staff hires are also expected to provide research and administrative support. Hoover plans to draw on reserves in the short term to support new fellow appointments, with the anticipation that long-term funding will be forthcoming. The institution will add new staff and associated program expenses for the Washington, D.C. office, with increased facility costs coming in future years. New activities in the library and archives and outreach, highlighted above, will be accomplished by reallocating existing resources.

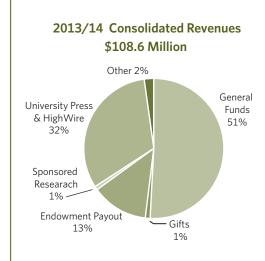
The institution plans to transfer \$3.2 million to the facilities reserve account, bringing the balance of the facilities reserve to approximately \$21.8 million by the end of 2013/14. After this transfer, Hoover expects a modest drawdown on fund balances to support fellow appointments, less than 0.5% of the total budget. The remainder of the current funds decline is due to the drawdown of restricted funds raised for specific projects of limited duration.

#### **Capital Plan**

Plans for the new Hoover Office Building on the site of the Cummings Art Building will be implemented over the next three years. This fourth building is needed as a result of steady growth in the institution since the opening of the Herbert Hoover Memorial Building in 1978, as well as anticipated growth in the future. The new building will provide 50,000 square feet of both offices and conference facilities. Fundraising for the \$45.6 million project is currently under way.

The following two facilities projects are expected to be completed in 2013/14: a renovation of the archival reading room in the Hoover Memorial Building; and a tenant improvement associated with new office lease in Washington D.C.

### STANFORD UNIVERSITY LIBRARIES



[IN MILLIONS OF DOLLARS]			
	2011/12 ACTUALS	2012/13 PROJECTION	2013/14 PLAN TOTAL
Total Revenues	105.4	107.2	108.6
Expenses			
Salaries and Benefits	65.7	65.9	69.0
Non-Salary	44.1	44.4	42.0
Total Expenses	109.8	110.3	111.0
Operating Results	(4.4)	(3.1)	(2.4)
Transfers From (to) Endowment &			
Other Assets	0.6	1.0	1.0
Transfers From (to) Plant	0.0	(0.1)	0.0
Surplus / (Deficit)	(3.7)	(2.2)	(1.5)
Beginning Fund Balances	18.9	15.2	13.0
Ending Fund Balances	15.2	13.0	11.5

# **Programmatic Directions**

Stanford University Libraries (SUL) is actively expanding and refining its services to address student and faculty needs in a rapidly changing educational environment. These services are increasingly digital and virtual, such as provision of data management services and tools, support for geographic information systems (GIS), and maintenance of a course management system. A strategic priority for SUL is ensuring that users understand the full suite of services that constitutes the library. Nevertheless, the traditional library functions of providing access to information resources, reference services, and secure and supported space for research and study continue to be highly valued, and SUL continues to purchase and license both print and digital resources for its patrons. Because of current capital projects and a focus on the build-out of the digital library, 2013/14 is expected to bring significant changes to both the physical and the virtual services of SUL.

In 2012/13, SUL has focused on enhancing research support. A new head for the East Asia Library was brought on board, along with a Japanese Studies librarian, in support of the expanding programs of the faculty within the Center for East Asian Studies. In addition, SUL worked with the History

Department to bring in an academic technology specialist to support its programs. SUL also rolled out the data management plan tool that walks Stanford's principal investigators through the steps of developing a data management plan tailored to the requirements of their specific federal funding agency. This online tool also provides descriptive text that can be included in a grant proposal.

For 2013/14, SUL anticipates further advancing its support for research by moving five positions that were funded with one-time sources in previous years to incremental base funds. These positions support the Archive of Recorded Sound, GIS, Chinese Studies, Digital Humanities, and SUL's off-campus, high-density storage facility, known as SAL3. In addition, with presidential funding, SUL will initiate phase two of the digital library build-out (DLB2). Objectives of this project, which is expected to span four years, include continued digitization, particularly of nonprint materials; improved web archiving; expansion of the Stanford Digital Repository (SDR); and development of digital services enabling scholars to exploit digital content in innovative ways. As part of the expansion of the SDR, SUL will continue to expand support for archiving and distribution of research data sets. This program, developed in coordination with

the Vice Provost and Dean of Research, has proved to be of great interest to significant numbers of faculty across disciplines.

SUL continues to support about 1,200 courses per quarter in the campus's largest course management system, CourseWork, and has revamped its team to ensure that it provides the functions, options, tools, and support that users need. In 2013/14, SUL will expand its support for CourseWork, including modules to support new pedagogical models often associated with MOOC (massive open online course) platforms, such as flipped classrooms.

## **Consolidated Budget**

SUL's consolidated budget includes three auxiliaries: HighWire Press, Stanford University Press, and LOCKSS (Lots of Copies Keep Stuff Safe), representing one-third of the total consolidated budget. Consolidated revenue and operating transfers are expected to total \$108.6 million. They consist of \$55.6 million in general funds, \$34.3 million in auxiliary revenue, and \$18.7 million in restricted funds. Consolidated expenses are projected to total \$111.0 million, resulting in a planned operating deficit of \$2.4 million. Compensation expenses are budgeted at \$69.0 million, operating expenses at \$20.0 million, and library materials acquisitions at \$22.0 million. Included in the expenses are an additional \$250,000 for e-books and \$1.0 million for facility efforts related to opening the Rumsey Map Center. The operating deficit will be covered by \$1.4 million in restricted fund balances and a transfer of \$1.0 million from the Stanford University Press Research Fund endowment principal.

SUL's base operating budget is projected to grow 4.4% from the 2012/13 level, but budgeted decreases in auxiliary and sponsored research spending are projected to reduce overall growth to 2.6%. Both 2012/13 and 2013/14 budgets include \$2.6 million in one-time presidential funds to continue DLB2.

Fund balances at the end of 2013/14 are expected to be \$11.5 million. SUL projects balances of \$1.8 million in restricted expendable funds, \$4.6 million in restricted endowed funds, \$1.8 million in library designated funds, \$2.2 million in LOCKSS designated reserves, and \$1.1 million in

LOCKSS auxiliary funds. The transfer of \$1.0 million from the Press Research Fund principal will deplete that fund. The Press began a fundraising effort in 2012/13 to replace that source of operational support.

# **Capital Plan**

As noted above, SUL is actively engaged in several capital projects that will significantly improve services, particularly in departmental library spaces. Each of these moves brings with it a review of patron needs and a corresponding shift in library collections.

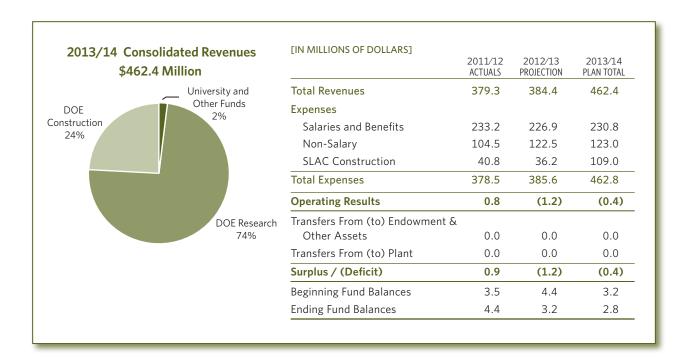
In 2012/13, SUL completed phase two of its off-campus, high-density storage facility: Stanford Auxiliary Library III (SAL III), in Livermore, California. This facility provides secure storage in a climate-controlled, preservation-focused environment, with easy paging service back to campus. Completion of this project enables collections to be shifted off-campus, thus enabling library moves, relocations, and renovations.

Renovation of the former GSB South building for SUL is under way. By the end of 2013/14, SUL expects to move all service points currently housed in Meyer Library to this new facility. The East Asia Library, Academic Computing Services, the Digital Language Lab, and the 24-hour study room, along with SUL's Technical Services and Library Technology teams, will all be moving into modern spaces in that building.

In 2014/15, the Art Library will be relocating as part of the Department of Art & Art History's move to the new McMurtry Building. SUL has received one-time support for moving the collection to RFID (radio frequency identification) as a part of that move. The Rumsey Map Center is also expected to open in Green Library. This new facility will dramatically improve access to SUL's remarkable collection of digital and physical maps and will highlight the donations of David Rumsey.

In 2015/16, the Math, Biology, and Chemistry libraries will be brought together in a Combined Sciences library within the Teaching Labs & Learning Center planned for the Old Chemistry building.

# SLAC NATIONAL ACCELERATOR LABORATORY



# **Programmatic Directions**

SLAC is a multiprogram national laboratory operated through a management and operating contract by Stanford University for the Department of Energy (DOE) Office of Science. This contract has been renewed through September 30, 2017. In 2010, the DOE renewed the land lease at SLAC through September 30, 2043. This lease extension guarantees the full usage of the Office of Science's Linac Coherent Light Source (LCLS) facility.

SLAC hosts DOE scientific user facilities that provide worldclass, state-of-the-art electron accelerators and related experimental facilities used annually by 3,000 scientists from all over the world to conduct research in photon science, astrophysics, particle physics, and accelerator science. The major programs SLAC currently undertakes to achieve its vision are described below.

#### **Scientific User Facilities**

SLAC operates two major DOE Basic Energy Sciences user facilities: Stanford Synchrotron Radiation Lightsource (SSRL) and LCLS. SLAC also operates the Facility for Advanced Accelerator Experimental Tests (FACET) for advanced accelerator R&D funded by DOE High-Energy Physics (HEP).

SSRL provides X-ray beams and advanced instrumentation for research in many areas of science, engineering, and technology. Applications range from energy storage and environmental remediation to drug discovery and magnetism in thin films. In 2013, roughly 1,600 unique scientific users are scheduled to perform research using SSRL's X-ray beam lines. In 2013, the synchrotron achieved routing of 500 milliamperes of current, which is among the highest operating currents of an intermediate energy light source. The increased current makes SSRL's X-ray beam lines brighter, providing clearer experimental results and reducing the time needed for data collection.

LCLS is the world's first hard X-ray free electron laser and is one of only two in the world. Experimental operations began in late 2009, and all six instruments are in operation. LCLS has attracted over 550 unique users. LCLS probes the structure and dynamics of matter at nanometer-to-atomic dimensions and on femtosecond time scales. This is opening new frontiers of discovery in areas including atomic physics, imaging of nonperiodic nanoscale materials, nanocrystallography, ultra-fast structural and electrodynamics, and matter under extreme conditions.

Based on the success of LCLS, the DOE approved planning for LCLS-II in April 2010. This expansion of LCLS is expected to be complete in 2019 and will significantly enhance its scientific capability and capacity. LCLS and LCLS-II will maintain SLAC's position as a world leader in the emerging field of ultrafast X-ray science, an area expected to see significant growth and impact in 2013 and beyond.

FACET, funded by the American Recovery and Reinvestment Act of 2009, brings an important complementary capability for advanced accelerator R&D. FACET is key to sustaining SLAC's core capabilities in advanced accelerators and serving a national need for access to a unique test bed for developing new acceleration concepts.

### **Photon Science Program**

SLAC's photon science program is growing in the chemical and materials science areas. In addition to the Photon Ultrafast Laser Science and Engineering Center (PULSE) and the Stanford Institute for Materials and Energy Science (SIMES), SLAC coordinates with Stanford's Department of Chemical Engineering on SUNCAT, the Center for Sustainable Energy through Catalysis. SUNCAT focuses on creating better catalysts for use in alternative energy industries. Planning is under way to begin a new initiative in the biosciences, in partnership with the Schools of Medicine and Humanities & Sciences.

#### **High-Energy Physics Program**

SLAC's multifaceted program in particle physics and astrophysics operates experiments in space, on the Earth's surface, and deep underground to explore frontier questions about the nature and origin of the universe.

SLAC has begun user operations of FACET, which uses two-thirds of the iconic SLAC linear accelerator to study plasma wakefield acceleration. It has the potential to accelerate subatomic particles 1,000 times faster over a given distance than existing accelerators, thus shrinking the size and cost of accelerators for scientific research, medicine, and industry.

SLAC is a major partner in the ATLAS experiment at the Large Hadron Collider at the European Organization for Nuclear Research (known as CERN), which announced discovery of a Higgs-like particle last summer. SLAC is also a leading contributor of R&D for the International Linear Collider's accelerator and detector. The Enriched Xenon

Observatory continues its search for some of the rarest processes in nature as signatures for whether the neutrino is its own anti-particle or not.

SLAC's cosmic frontier program includes the Fermi Gammaray Space Telescope, R&D efforts for the next-generation dark-energy experiment, the ground-based Large Synoptic Survey Telescope (LSST), and the Super Cryogenic Dark Matter Search (CDMS) experiment. SLAC hosts the Instrument Science Operations Center for Fermi's main instrument, the Large Area Telescope. The LSST is designed to determine the properties of dark energy with higher precision, and SLAC will lead the construction of the DOE-funded, 3.2-gigapixel camera for the project. Super CDMS will be the next-generation underground experiment seeking to directly observe relic dark matter from the Big Bang. The Kavli Institute for Particle Astrophysics and Cosmology provides the intellectual center for these activities and a vital link to Stanford campus researchers in these fields.

# **Consolidated Budget Overview**

The 2013/14 SLAC budget is expected to increase by 20% in 2013/14 due to a \$73 million increase in construction costs for DOE funded buildings. The majority of the SLAC budget, \$451.9 million, is funded by the DOE Office of Science, including \$342.9 million for direct research and \$109.0 million for construction costs. The research component of the budget is expected to increase by only 1.7% over the 2012/13 levels due to federal budget constraints. Nonetheless, DOE has made a strong commitment to construction funding at SLAC, and the Research Support Building and the Science and User Support Building are moving forward on schedule. However, the funding and schedule for SLAC's major scientific project, LCLS-II, will be impacted as a result of the "no new start" restriction under the federal government's 2012/13 Continuing Resolution bill, a reduction of \$23 million from previous estimates. Given the large U.S. budget deficit and its implications on government discretionary spending, SLAC management continues to make contingency plans for absorbing potential budget reductions

The DOE's Office of Science is the major source of funding for SLAC. About 97% of SLAC's annual funding comes from DOE's offices of Basic Energy Sciences and High Energy Physics. As SLAC continues to transition to a multiprogram laboratory, it has seen a shift in DOE funding from

High Energy Physics to other scientific areas such as Fusion Energy Sciences and Energy Efficiency and Renewable Energy. In addition to DOE funded direct research and construction, there is roughly \$11 million in the SLAC consolidated budget that comes from university general funds and other research grants and contracts.

# **Capital Plan**

In February 2011, SLAC completed its Long-Range Development Plan with its vision to consolidate research activities, upgrade infrastructure, and/or demolish and renovate facilities. This plan helps to identify which SLAC capital projects require university Board of Trustees approval for Concept, Site and Design.

In 2008/09, the \$97 million DOE-funded Research Support Building and Infrastructure Modernization Project commenced and is planned to be complete in late 2014. The project includes a new 64,000-square-foot building (B052) to house accelerator research staff, a new 12,000-squarefoot lab/office building (B056) to accommodate biochemical engineering, biophysics and material science researchers, the renovation of two (B28 and B41) mission-support buildings (64,000 square foot) and the demolition of sub-standard buildings and trailers (64,000 square foot).

Additional projects within the Long-Range Development Plan include three DOE-funded projects — the \$65 million Science and User Support Building (SUSB B053) project, the \$55 million Photon Sciences Laboratory Building (PSLB), and the \$405 million Linac Coherent Light Source II (LCLS-II) Experimental Complex, whose facilities primarily consist of underground tunnels, above ground tunnel access structures, and an underground experimental hall to house technical and experimental apparatus. Based on the success of LCLS, the DOE approved planning for LCLS-II. This phase will significantly enhance the scientific capability and capacity of the LCLS and is expected to be ready for operational use in 2018.

The SUSB project includes the demolition of the Panofsky Auditorium and SLAC's cafeteria and replacement with a new auditorium, cafeteria and user center, creating a new "front door" that will be the first stop for SLAC researchers and visitors. The SUSB will break ground in July 2013 with occupancy planned for 2015. The PSLB project will construct new environmentally sustainable facilities that will include laboratory space, offices and collaboration space to support SLAC's photon science mission. The PSLB is in the planning phase with DOE, with a tentative ground breaking in 2016 and occupancy in 2018.