

CHAPTER 2 ACADEMIC UNITS

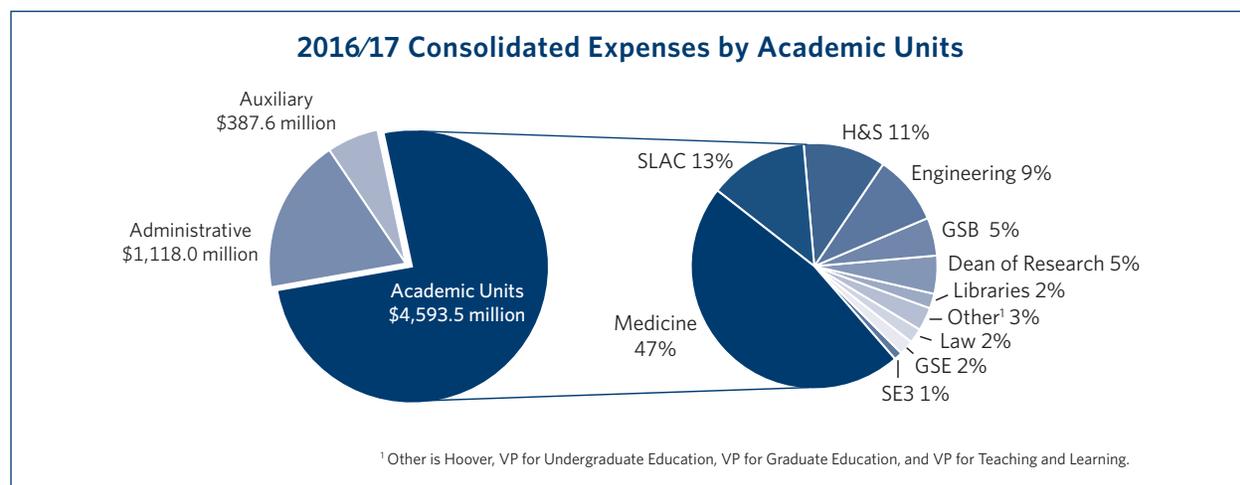
OVERVIEW OF ACADEMIC UNITS

This chapter summarizes programmatic and financial activity for each academic unit. The revenue expectation in 2016/17 for these academic units comprises nearly 75% of the university total revenue. Overall, the academic units project an operating surplus of \$135.5 million. After transfers to facilities and endowment, the unit budgets overall will achieve a \$103.9 million surplus.

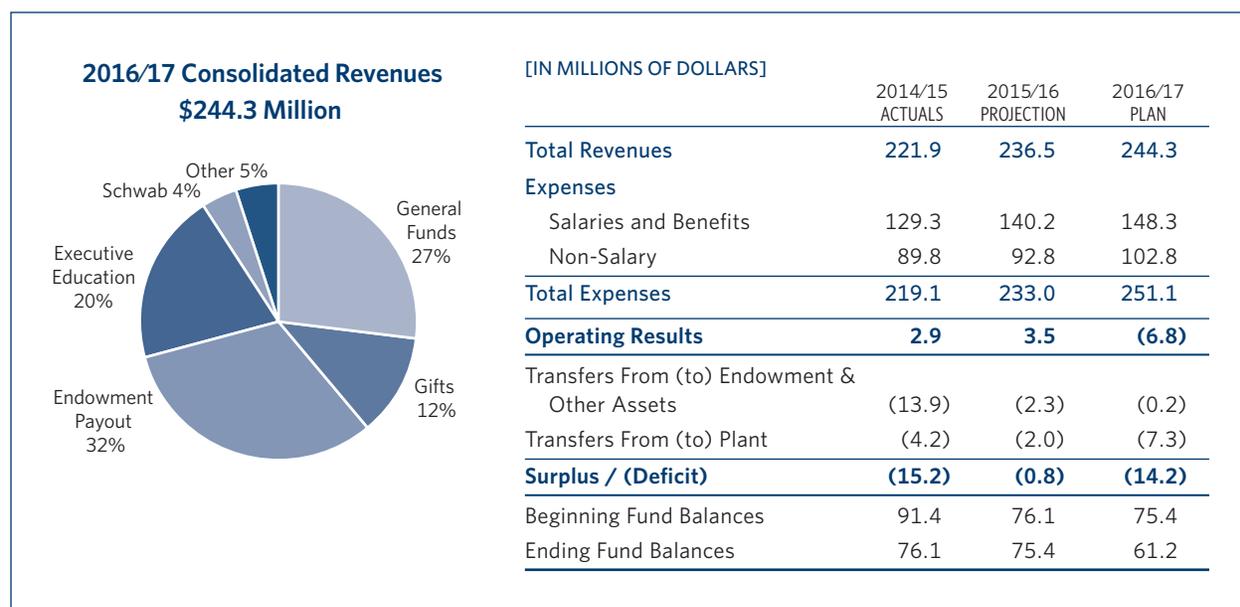
CONSOLIDATED BUDGET FOR OPERATIONS, 2016/17: ACADEMIC UNITS

[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	244.3	251.1	(6.8)	(7.4)	(14.2)
Graduate School of Education	75.0	74.1	1.0	(0.8)	0.2
School of Earth, Energy & Environmental Sciences	64.3	68.4	(4.2)	0.2	(4.0)
School of Engineering	407.0	408.6	(1.6)	0.0	(1.6)
School of Humanities and Sciences	514.8	497.2	17.5	(14.8)	2.7
School of Law	93.5	86.3	7.2	(6.6)	0.6
School of Medicine	2,286.1	2,145.0	141.1	(0.8)	140.4
Vice Provost and Dean of Research	223.6	233.7	(10.1)	(1.2)	(11.3)
Vice Provost for Undergraduate Education	46.9	49.0	(2.0)	0.0	(2.0)
Vice Provost for Graduate Education	6.9	11.1	(4.3)	(0.3)	(4.5)
Vice Provost for Teaching and Learning	19.1	19.5	(0.4)	0.0	(0.4)
Hoover Institution	65.7	68.0	(2.3)	0.0	(2.3)
Stanford University Libraries	87.2	87.0	0.2	0.0	0.2
SLAC	594.5	594.5	0.1	0.0	0.1
Total Academic Units	4,729.0	4,593.5	135.5	(31.6)	103.9



GRADUATE SCHOOL OF BUSINESS



PROGRAMMATIC DIRECTIONS

Since 2009, the Graduate School of Business (GSB) has focused on two main objectives: to increase its reach and impact and to strengthen its core. The GSB remains focused on delivering experiences to its students that will transform them into leaders who have the skills to change lives, organizations, and the world. In 2016/17, the GSB plans to stay the course as it transitions to a new dean.

Increasing Reach and Impact

The GSB's Global Innovation Programs (Stanford Ignite and Stanford Go-to-Market) engage students through a combination of in-person instruction and live sessions delivered by distance-learning technology. Classes are taught by the same renowned faculty that teach in the Stanford MBA program. Ignite runs in Bangalore, Beijing, London, New York, Santiago, and São Paulo, as well as at Stanford. This unique certificate program helps innovators around the world without graduate-level business training formulate, develop, and commercialize their business ideas. Go-to-Market, designed for entrepreneurs, innovators, scientists, engineers, and students with validated business ideas who are currently developing their go-to-market strategies and plans, takes place in Malaysia, Mexico, and Hong Kong. These programs have strengthened and increased Stanford's brand awareness internationally.

Having launched a new program in Nairobi, Kenya, in May 2016, the Stanford Institute for Innovation in Developing Economies (Seed) Transformation Programs will bring Stanford to West and East Africa and South/Southeast Asia in 2017. Seed is a GSB-led initiative to end the cycle of poverty in developing economies. Seed also introduces Stanford students to the challenges and opportunities of doing business in developing economies by offering internships. In addition, Seed is providing more than \$3 million in funding in 2015/16 and 2016/17 for research on entrepreneurship, product and service innovations that serve the poor, and the growth of firms in developing economies.

As part of Seed and in collaboration with Stanford's Freeman Spogli Institute, the Global Development and Poverty Initiative has made \$10 million in grants available to faculty across the university who plan to take a collaborative, interdisciplinary approach to combating poverty. The grants will also support teaching and efforts to apply research findings to on-the-ground training and practical problems affecting global poverty.

Executive Education will continue to expand online offerings. The LEAD (Learn, Engage, Accelerate, Disrupt) online certificate program, Corporate Innovation, started with an 85-student cohort in 2015 and will have 200 students per cohort by 2018/19, running two cohorts per year.

Strengthening the Core

The GSB continues to attract the highest-quality students into all of its degree programs. The student body is more diverse than ever, and selectivity and yield continue to increase. A number of pilot initiatives support increasing diversity in GSB programs and faculty.

To provide critical mass in its seven academic areas and to allow for a diverse elective curriculum, the GSB has increased its number of tenure-line faculty to 124, compared to 106 in 2009/10. Going forward, the GSB will focus on slightly growing the size of the faculty and increasing recruitment of women and minorities.

MBA Admissions will host a number of diversity events on and off campus. For example, the Stanford MBA Future Leaders Program introduces college students from diverse backgrounds to an MBA education and post-MBA career opportunities. Through this program, the GSB hopes to attract and educate the next generation of global leaders who will contribute to the diversity of future student bodies, executive teams, and boards. The GSB also offers fellowships to international students who need financial assistance and who will return to their home countries to effect positive change.

The PhD program supports the GSB's goal of increasing diversity through its Research Fellows postbaccalaureate program, which enables eight high-potential individuals to come to the GSB each year to gain valuable experience as research assistants, take doctoral-level courses, and participate in the intellectual community. The program targets students from underrepresented groups and covers the cost of their tuition and living expenses. Its goal is to broaden the pipeline of prospective PhD students, with an emphasis on attracting women and minorities.

The MSx program is focusing on fundraising for fellowship and career support. The GSB continues to see a shift toward self-funded students in this program. As a result, career management has become critical to its success, and need-based fellowships, especially for those in underrepresented

groups, will grow with the support of the MSx/Sloan alumni community.

The opening of Highland Hall in fall 2016 will make 200 new beds available for students, bringing total GSB student housing capacity to 480 rooms. However, during 2016/17 a \$10 million renovation project at GSB's Schwab Residential Center will make roughly 100 rooms unavailable. In 2017/18, GSB residences will operate at full capacity.

CONSOLIDATED BUDGET OVERVIEW

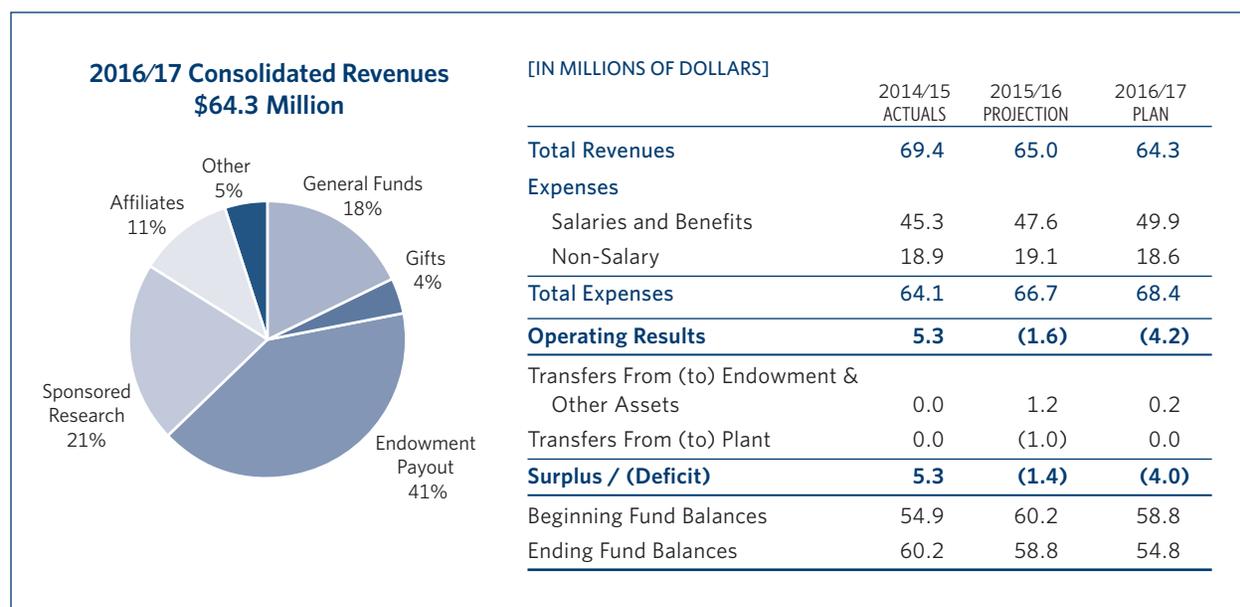
The GSB is projecting a \$6.8 million net deficit from operations for 2016/17. With the use of \$7.3 million for capital improvements to the Schwab Residential Center, a total decrease in fund balances of \$14.2 million is planned.

Revenues and transfers for 2016/17 are projected to increase by \$7.8 million, or 3.3%. Tuition rate increases, student growth in all programs, increased enrollment in Executive Education/Global Innovation Programs, and the first year of operation of the new residence drive this increase. In addition, gift revenue is projected to increase by about \$2 million, or 7%. These increases are offset by a \$5.2 million decrease in payout on the expendable funds balances.

Overall, GSB expenses are projected to increase by 7.8% in 2016/17. Compensation is projected to increase by 6%, primarily due to merit increases, staff growth in Seed and Executive Education, and the filling of positions that were open during 2015/16. Non-compensation expenses are planned to grow by 11% due to the opening of the new residence, new international Seed hubs, and financial aid. Financial aid is projected to grow by 10% to support higher total cost of attendance and a projected growth in need.

The GSB plans to use about \$11 million in unrestricted and \$3 million in restricted balances to fund the deficit. This will represent nearly a 19% decrease in fund balances, from \$75.4 million to \$61.2 million. If the current deficit continues, the GSB will adjust expenses to match revenues.

SCHOOL OF EARTH, ENERGY & ENVIRONMENTAL SCIENCES



PROGRAMMATIC DIRECTIONS

Stanford’s School of Earth, Energy & Environmental Sciences (SE3) is uniquely positioned to make essential contributions as the global community confronts the challenges posed by the growing demand for energy, water and food. As the world population grows to 9 billion, demand for these resources will increase. Needs must be met in spite of obstacles posed by climate change and in ways that protect and preserve the planet’s environment and resources for future generations. To expand its impact, SE3 launched an ambitious fundraising effort for new facilities, faculty positions, fellowships and new programs. These resources will allow SE3 to accelerate research, education, and problem solving aimed at meeting the resource needs of people while maintaining a safe and sustainable planet. The initiative leverages the school’s strengths in four critical areas:

- **Securing the energy future**—developing approaches and technologies to allow a future where energy is abundant, efficient, and produced in a sustainable way
- **Climate solutions**—evaluating the extent and consequences of climate change and developing approaches for reducing risk and enhancing resilience to climate hazards

- **Reducing disaster risks**—using advances in computation and remote sensing to understand natural hazard risks and test potential approaches to protecting vulnerable populations
- **Food and water security**—developing ways to provide food and access to clean water for a growing population, especially in the context of climate change

Through school investment, significant research is under way and new curricula are being developed. Funds raised will support new faculty positions to complement existing expertise, educational programs to train students for leadership in an increasingly complex world, and most importantly, new infrastructure to enhance the school’s capacity for transformative learning and research. SE3 has a critical need of a new facility. The school’s ability to succeed in its mission will suffer greatly without a new building that provides collaborative work areas, innovative teaching spaces, and advanced laboratories. Securing the support needed for this new facility is the highest priority for school leadership in the coming year.

SE3 dedicated the O’Donohue Family Stanford Educational Farm in October 2015. The farm is a tremendous success and hub of activities, offering undergraduate courses, field

laboratories, student research opportunities, workshops, and community events that teach about sustainable food production. An additional benefit is that much of the food produced is used in Stanford's dining halls.

SE3 is developing a new interdisciplinary master's program focusing on the knowledge, tools, and approaches needed to lead the sustainability transition. Nicknamed LeadStar (Leadership for Sustainability and Resilience), the program hopes to receive senate approval in spring 2016, offer courses starting in fall 2016, and offer a coterminous MS degree in spring 2017. The curriculum will also be used in a unique and in-demand professional education program to be piloted with the Graduate School of Business in July 2016 for the World Economic Forum's Young Global Leaders. LeadStar is just one of several Executive Education programs SE3 plans to develop and pilot in 2016/17.

In pursuing these goals, SE3 is relying on successful fundraising but is investing its own resources early on. However, it is doing so with caution. Endowment income, which accounts for 40% of the school's revenue, will remain flat in 2016/17. Additionally, income from the oil and gas industry, a large component of the revenue from the school's industrial affiliates program, is projected to be down significantly. Support for federally sponsored research is also showing signs of weakness. Therefore, the school is making tough decisions on allocating resources while maintaining momentum. The school estimates it will use \$3.9 million in reserves to support 2016/17 activities. If endowment growth remains flat in 2017/18 and beyond, SE3 will be forced to look at a number of cost-cutting measures as well as possibly requesting mitigation funds from the university.

CONSOLIDATED BUDGET OVERVIEW

SE3 projects a shortfall of \$4.0 million on a consolidated budget of \$68.4 million in 2016/17. Total revenue and transfers are anticipated to decline by 1.1%, while expenses grow modestly by 2.5%. Endowment payout will remain flat, while income from industrial affiliates program membership fees and direct investments in the oil and gas market will

continue the sharp decline that began in 2015/16, driven by turbulent market conditions. Income from these sources is anticipated to decline by approximately \$2 million in 2016/17 from the recent high of over \$10 million in 2014/15.

Compensation expenses, which represent 73% of the school's consolidated budget, are projected to increase by 4.8%. After cost rise, incremental growth is modest and reflects measured additions of faculty, academic and administrative staff positions in direct support of the school initiatives described earlier. Non-compensation expenses are projected to decline by 2.6%. Capital equipment expenses are expected to return to a more typical level from a spike in 2015/16.

To cover the projected budgetary shortfall, SE3 expects to draw on its reserves, primarily affiliates program reserves and endowment income fund balances.

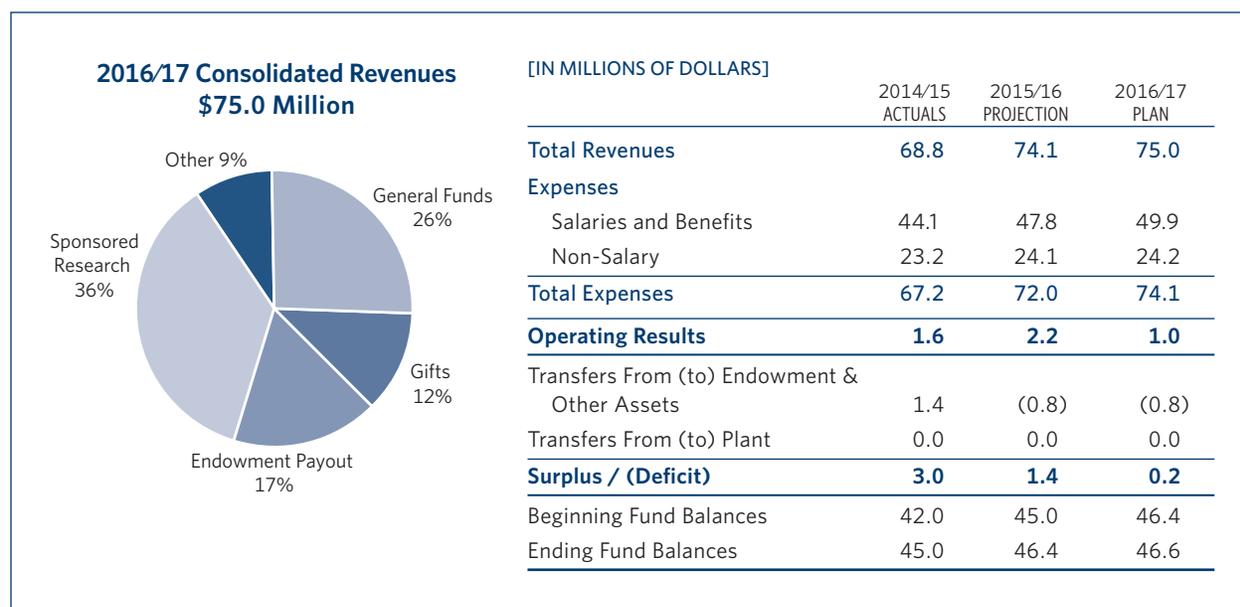
CAPITAL PLAN

SE3's capital plan for 2016/17 continues efforts from last year's plan and has two significant components.

The school expects to receive concept and site approval from the Board of Trustees by late 2016 for the Earth, Energy & Environmental Sciences Building. The next phases of the project, including detailed programming and design development, will be the focus in 2016/17. The benchmarked cost of the building is approximately \$126 million, with \$40 million coming from academic debt and the balance from fundraising and school resources. Project completion is targeted for late 2019.

The O'Donohue Family Stanford Educational Farm will continue its evolution in 2016/17. The school has secured gifts to support the construction of a "barn" to provide work space as well as classrooms, bathrooms, and offices; an outdoor kitchen; and an urban demonstration garden at a cost of approximately \$2.8 million. Planning is well under way for these additions, and construction is scheduled for calendar year 2017.

GRADUATE SCHOOL OF EDUCATION



PROGRAMMATIC DIRECTIONS

The past year was one of leadership transition for the Graduate School of Education (GSE). In addition to appointing a new dean, the school appointed two new faculty associate deans to oversee faculty and student affairs. Throughout the change in leadership, the GSE has continued to advance in several critical areas and has established a blueprint for moving forward.

Highlights from the past year include:

- Completing the scoping phase of a new building planning process.
- Growing the highly successful partnership with San Francisco Unified School District and expanding involvement with other school districts.
- Enhancing development offerings for education professionals, providing a continuum of opportunities from preservice teacher training to leadership development for principals, superintendents, and community college presidents.
- Welcoming eight new faculty, for a doubling of the number of GSE junior faculty.

With an eye toward the future, the GSE has initiated a three-tiered process for strengthening the school. Tier 1 emphasizes internal operations and priorities. Tier 2 involves bringing

the GSE to the broader Stanford community. Tier 3 focuses on developing a vision that will ensure the school remains at the forefront of educational scholarship and relevance in ten to fifteen years.

Tier 1: Internal Focus

Technology and Equity—The GSE recently launched a new initiative to advance a research and design agenda focused on questions that emerge from the intersection of equity, information technologies, and education. This project will catalyze new collaborative research partnerships within the GSE, across the university, and with school and community organizations. It will also support the creation of inviting physical spaces in which to prototype, test, and showcase innovations with learners and teachers.

Graduate Student Support—With recent support from the provost, the school established a summer fellowship program that will provide some summer funding for its doctoral students. This program has four purposes. It will help students reduce their debt burden. It will provide doctoral students one summer to focus on their work, hopefully shortening their time to degree. It will send a powerful message to current students about the school's commitment to supporting their academic progress during their time at Stanford and may help recruit prospective students. It will also reduce pressure on faculty who fund students on grants during the summer.

Student Intellectual Collaboration Initiative—The GSE created a new dean’s intellectual collaboration program, which solicits and funds proposals from students that build the intellectual community. It has been broadly successful in receiving proposals from all segments of the student population addressing their deepest concerns and interests. Ten proposals were funded this year.

Addition of STEP Electives for Dual Credential—Currently, the one-year curriculum of the Stanford Teacher Education Program (STEP) enables its secondary-focused students to graduate with a single-subject credential in one content area and an MA in education. Increasingly, school districts want teachers to have an additional credential in a second content area.

The GSE is piloting the development of curricula and instruction in each of the primary content areas (math, science, English, and history) that will allow students to achieve a supplemental credential in another content area during their year in STEP. The school may subsequently extend the reach of the STEP curriculum by launching online or hybrid versions of these courses.

Tier 2: Expansion of Work with Other Stanford Academic Units

The GSE has valuable expertise relevant to the educational mission of the university, including expertise in applied social and behavioral science that may be useful to students and faculty in other schools. The GSE seeks to broaden its already strong connection to the university community by exploring new and innovative ways to engage with colleagues across campus.

Tier 3: Visioning

Tier 3 involves creating a compelling vision of how the GSE can lead in education—a vision that resonates with its stakeholders, anticipates the cutting edge of future research, and addresses what the school should look like in ten to twenty years.

To facilitate visioning, the school has developed a process to determine hiring priorities over the next five years. An ad hoc committee is responsible for soliciting and triaging brief white papers from current faculty and stakeholders that make the case for hiring priorities. The entire faculty will deliberate on the proposals to produce a prioritization and envision the future of educational research and potential for impact.

CONSOLIDATED BUDGET OVERVIEW

The GSE projects a 2016/17 consolidated budget with total revenue and transfers of \$75.0 million, expenses of \$74.1 million, and operating results of \$968,000. After asset transfers, including a \$1.3 million transfer from endowment income to student loan funds in support of master’s students enrolled in STEP, the school projects a modest consolidated surplus of \$168,000.

A number of new faculty hires led to a significant increase in the school’s academic salary budget in 2015/16. For 2016/17, the consolidated budget reflects modest growth in both salary and nonsalary expenditures. The increase in staff salary is mostly due to the GSE’s investment in programming and web development resources.

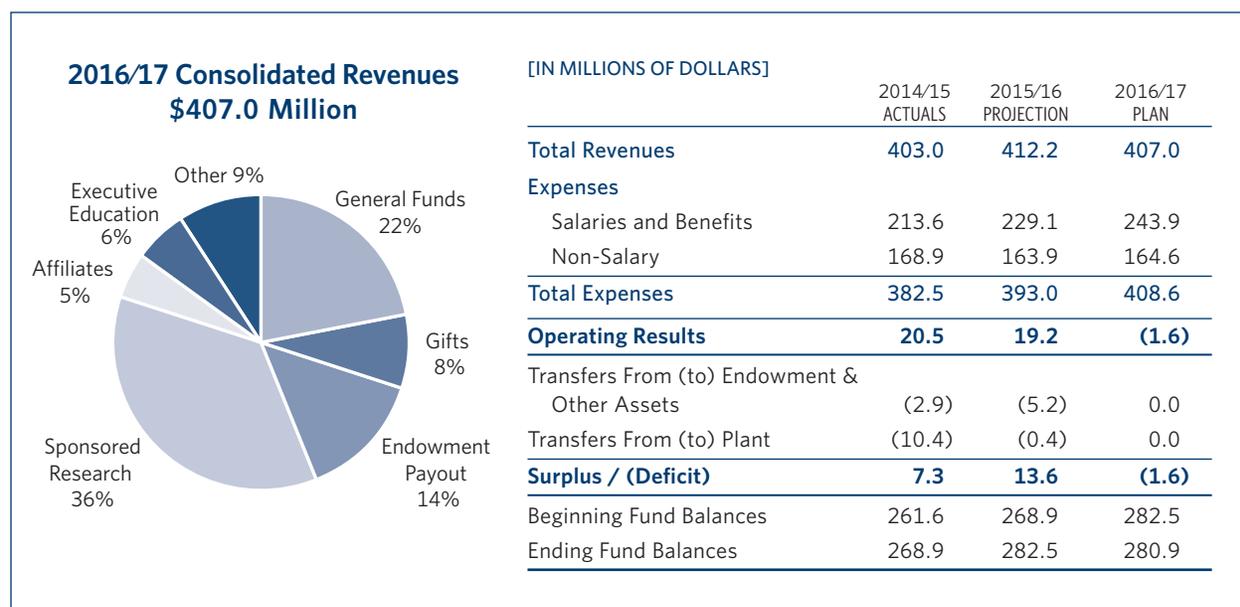
Over the past seven years, the GSE has achieved strong growth in sponsored research volume by successfully accessing a broad network of research funders in a highly competitive environment. Sponsored research rose 14.3% in 2014/15. For 2015/16, federal funding is trending downward, while foundation funding continues to climb. Overall, the GSE projects much more moderate increases in sponsored research activity of 5% in 2015/16 and 3.5% in 2016/17.

In spite of somewhat constrained revenue in 2016/17, the school plans to move forward with a number of new initiatives related to diversity, collaboration, innovation, and technology. Salary savings from an unusually large number of faculty sabbatical leaves next year will help fund these efforts. In addition, the school anticipates drawing down gift balances in support of center and program operations.

The flattening of endowment payout for 2016/17 puts some stress on the school’s operating budget and its ability to fund new projects. However, several anticipated endowed gift installments, along with a newly established GSE unrestricted endowed fund, will help mitigate that impact. In addition, the dean’s office is asking school units to curtail discretionary spending.

Over the next three to five years, the school anticipates using accumulated fund balances for facilities projects that will enable growth within its existing footprint and that serve as tests of possible attributes of a new building that can support modern research, teaching, and practice in education.

SCHOOL OF ENGINEERING



PROGRAMMATIC DIRECTIONS

In spring 2015, the School of Engineering (SoE) Future Committee, composed of faculty, staff, and students, delivered a strategic framework of what the school should look like in the decades to come and how it should be configured to address the challenges and opportunities of the future. After six months, the committee emerged with two key outputs.

The first was a set of ten broad, aspirational questions on areas where the school would like to have an impact. Among them: How can humanity flourish in the cities of the future? How can everything be secured? How well can living matter be engineered?

The second was a series of recommendations on how the school would need to evolve the culture, deploy resources, and create the conditions to allow Stanford faculty and students to have impact on these grand challenges. They focus in particular on elements of how to educate the 21st-century engineer, how to conduct research and advance interdisciplinary collaboration, and the culture in which the school does both. Increasing the diversity of the faculty and students is a key to future success.

To meet the strategic objectives developed through the SoE Future process, the school will need to grow the faculty by

more than 30 over the next ten years. The first step in this process was to request 15 new unfunded billets from the provost, and these were granted in 2015/16. The SoE will fundraise for endowed chairs to begin filling these billets over the next five years. The school projects accompanying growth in staff and PhD students as these billets are filled.

The school will also need to address pressing issues in the present. Foremost of these is the number of undergraduate students selecting engineering majors or taking engineering courses while majoring in another area. Both the total number of undergraduate students and the number of units taught have been growing unabated for more than five years, and for the first time the school is teaching more undergraduate than graduate students.

A continuing need in the SoE for several years has been funding for teaching assistants (TAs) to support faculty in teaching. Despite past funding increases from the university, local funds from the school, departments, and individual faculty have been used to fill a persistent gap between income and actual TA expenses. A general funds increase of \$4.75 million for 2016/17 will significantly reduce the gap as the school and university continue to monitor trends in undergraduate enrollment.

Staffing at the departmental level has also been strained by both student growth and overall programmatic growth. Many of the school's departments are struggling to provide direct services to students and grappling with the basic administrative and financial functions associated with a larger scope of business. Incremental general funds will address staffing needs in the Computer Science, Mechanical Engineering, and Management Science and Engineering departments.

CONSOLIDATED BUDGET OVERVIEW

The SoE projects a 2016/17 consolidated budget with total revenue and transfers of \$407.0 million, expenses of \$408.6 million, for a projected deficit of \$1.6 million. Compared with the 2015/16 year-end projection, 2016/17 revenue will decrease by 1.3% and expense will increase by 4.0%.

Sponsored research remains the largest single component in the SoE budget, at approximately 36% of revenue. Federal grants are projected to experience small growth of 2.0% in 2016/17, reflecting a continued challenging environment for faculty applying to federal sponsors. Non-federal sponsored research will also experience small growth.

In non-sponsored activity, a revenue decrease of \$7 million is driven by a \$12 million decrease in Stanford Center for Professional Development (SCPD) income. The school's revenue projections are uncertain because of changes to the SCPD operating model. One result of these changes is that the balance between professional education and traditional for-credit education may shift, and it is too early to measure what effect this will have on the SCPD's income and the subsequent distribution to departments. The SCPD income loss is offset by increased general funds support for teaching assistants' salaries and tuition allowance and additional school support staff. Expendable gifts and endowment income are expected to increase modestly.

The overall school reserve position is strong, but the funds are asymmetrically distributed among faculty, departments, and the school. Faculty and laboratories within departments control 88% (\$106.6 million) of designated fund balances and 89% (\$87.5 million) of expendable gift balances, most of which are earmarked for research. The majority of re-

serves controlled by the school are restricted to faculty and student support. The distribution of funds and restrictions on fund balances challenge the school in seeding new initiatives.

The majority of endowment payout schoolwide supports faculty salaries and students through endowed chairs and fellowships. With flat endowment payout, the school will use reserve balances to meet faculty payroll if necessary. The school plans to spend from reserves to boost fellowships, but departments may choose to hold student aid flat. There may be some targeted cut-backs, but there is no schoolwide plan to reduce expenses due to endowment payout concerns.

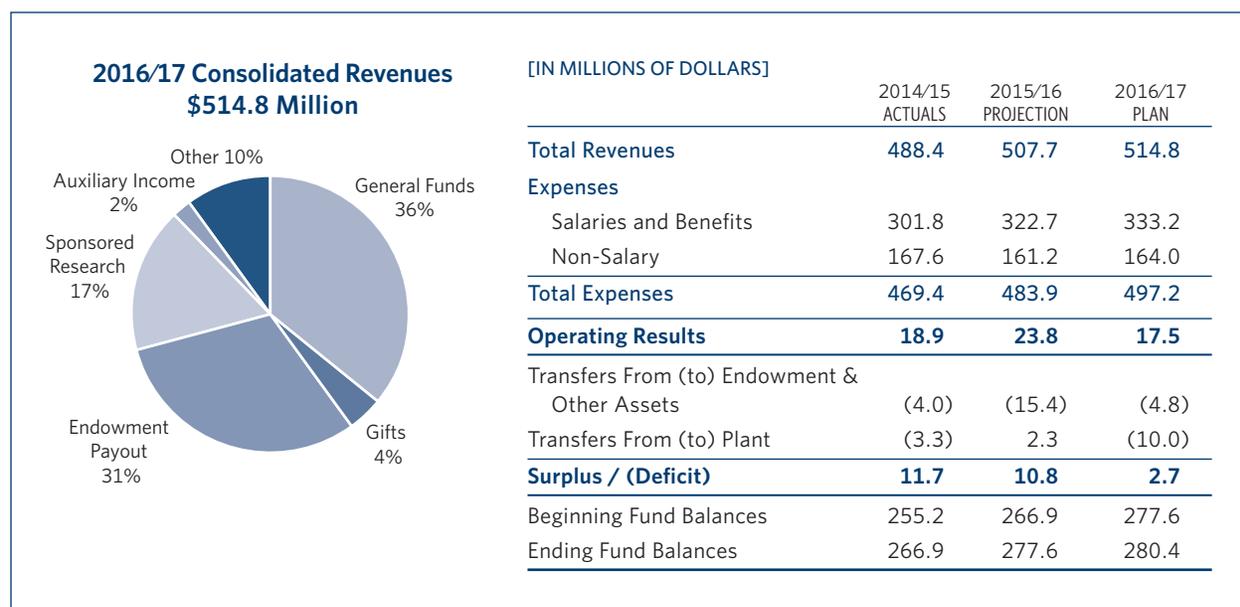
CAPITAL PLAN

The SoE will complete \$2 million of construction in 2015/16 and begin operations in 2016/17 in two new shared fabrication facilities in the Allen Building. The Experimental Fabrication Facility and the Systems Prototyping Facility are designed to meet the needs of researchers and students today while helping inform the school about future directions in fabrication as it explores alternatives for the aging clean room in Allen.

Programmatic planning for renovations to both the Durand Building and the Packard Engineering Building are ongoing in 2015/16. Once the scope for Durand is finalized, the SoE expects to begin phased construction in 2016/17. Funding has not yet been identified for the Packard project, so the timing for transition to construction remains open ended. The Durand renovation will allow for growth in the Aero/Astro and Materials Science and Engineering departments by making use of space vacated by Mechanical Engineering. Renovations in Packard will improve teaching space and increase the student, faculty, and staff density to support growth in both Electrical Engineering and Computer Science.

The school is doing long-range planning to address the growing intersections of computation with almost every other field of inquiry at the university. The school envisions a new facility sited and designed in a way that cultivates and nurtures these intersections.

SCHOOL OF HUMANITIES & SCIENCES



PROGRAMMATIC DIRECTIONS

The School of Humanities & Sciences (H&S) continues to be in a position of strength after several years of investments in faculty, academic initiatives, and facilities. H&S replaced faculty lost during the recession and significantly advanced program quality through high-profile senior recruitments in key areas. A number of these faculty will provide leadership to university-wide interdisciplinary initiatives, including the Chemistry, Engineering and Medicine for Health Institute (ChEM-H) and the Neurosciences Institute. Learning environments for the arts are being enriched by the opening of the McMurtry Art and Art History Building and, in 2016/17, by completion of the Roble Gym renovation as a new theater and dance performance and teaching space. Major investments are also under way to support scientific research as the new science quad is developed. The Bass Biology Building begins construction next year and will support the university's biochemistry and computational research initiative. The Science Teaching and Learning Center (renovated Old Chem) will create innovative pedagogical opportunities for integrating chemistry and biology laboratory instruction.

These investments are strengthening H&S and positioning the school for the future, but several challenges will have

to be managed in upcoming years. Undergraduate degree conferrals in H&S have declined during the past decade, particularly in the humanities and social sciences, threatening Stanford's position as the university with the most consistent broad excellence across all disciplines. The school has initiated programs such as the Summer Humanities Institute to stimulate interest in the humanities among high school juniors and seniors and to build a pipeline of potential students. Stanford Career Education is providing counseling focused on career paths in the humanities. To draw in students with computer interests, teaching in the digital humanities using computational methods to address questions in history and literature is growing, and the school has created a minor in the digital humanities. Several social science departments have added computational tracks to existing majors to respond to increased student interest in quantitative areas of study. In the natural sciences and mathematics, markedly increased student demand for introductory courses has stimulated an examination and improvement of teaching methods.

Adding to enrollment concerns, H&S financial forecasts have anticipated a more restrained environment, and the school has been slowing activity levels, primarily by reduc-

ing faculty hiring to replacement rate. External factors are adding pressure to the school's financial outlook. Although several senior-level faculty recruitments have resulted in increased grants and contracts during 2015/16, overall volume has been erratic during the past several years, impacting graduate student and faculty summer salary support. Poor endowment performance will create a \$3.6 million funding gap in 2016/17, and this number is projected to increase in subsequent years. The school is developing the additional short- and long-term responses required in this increasingly constrained environment.

CONSOLIDATED BUDGET OVERVIEW

For 2016/17, H&S projects revenues and operating transfers of \$514.8 million and expenses of \$497.2 million, resulting in an operating surplus of \$17.5 million. After \$14.8 million of net transfers to assets, the school projects an increase in consolidated fund balance of \$2.7 million, with an ending balance of \$280.4 million. The 2016/17 projected surplus is a sharp decrease from the 2015/16 level largely due to the use of \$10.0 million of reserves to fund the Bass Biology Building construction project. A high volume of faculty recruitment during 2011/12–2014/15, plus several recent expensive hires, will continue to inflate expenditures in the near future as faculty spend start-up packages across multiple years. Federal and non-federal sponsored research funding grew significantly during 2015/16 as large grants associated with new senior faculty hires were moved to Stanford. The school is projecting research volume to plateau during 2016/17 as hiring volume tapers off.

Flat endowment payout will also impact the 2016/17 bottom line. The gap between expense inflation and payout growth will be \$2.8 million for the dean's office and \$842,000 for departments and programs. Some H&S units are fully funded by endowment income, while others receive no endowment funding. Consequently both the impact of and the solutions to this problem will vary widely across the school. H&S will fund the 2016/17 gap by spending reserves

and reducing expenditures, but a more permanent solution would be required for 2017/18 if slow endowment growth continues.

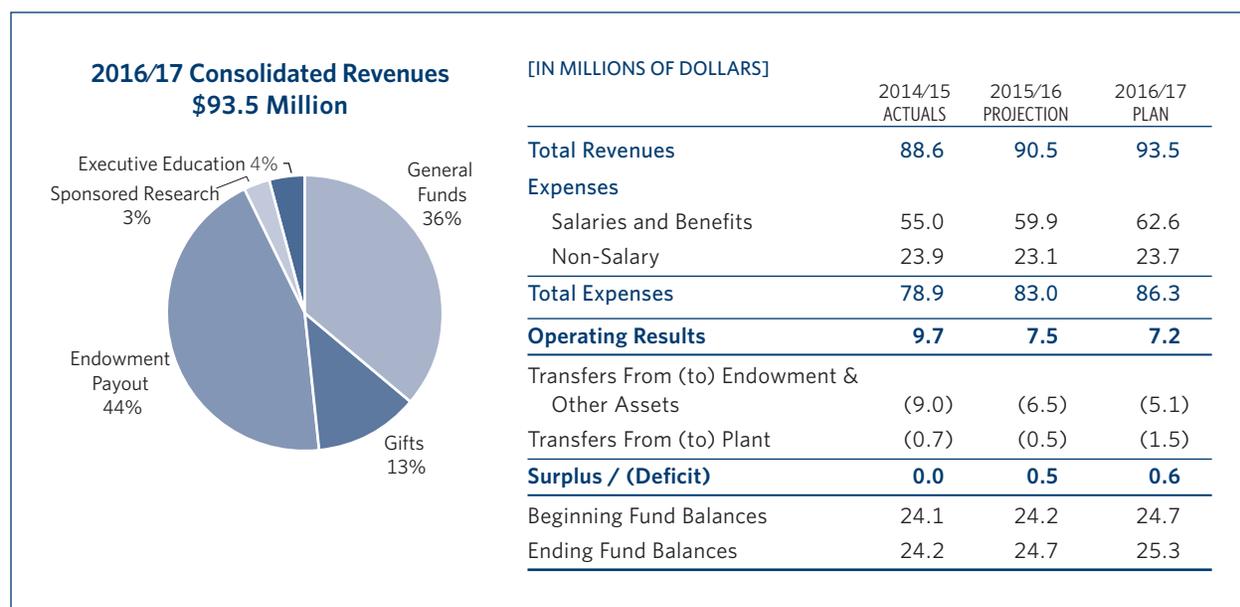
Consolidated fund balances are projected to increase by \$10.8 million in 2015/16, primarily in new faculty start-up balances and housing loans. Operating activities and large transfers for recruitment and retention packages will spend down \$2.3 million of dean's office reserves, which will be replenished by a \$2.3 million refund from the McMurtry Building construction as donor pledge payments are made. A portion will then be used to fund several science quad construction projects.

In 2016/17, consolidated fund balances are projected to increase by \$2.7 million. However, dean's office reserves will decrease by \$13.7 million to fund \$10 million equity contribution to the Bass Biology construction project, the \$2.8 million endowment payout funding gap, and large recruitment and retention commitments. H&S forecasts a net use of reserves for several more years as large recruitment commitments are funded and solutions are implemented for low growth of endowment payout.

CAPITAL PLAN

With the completion of the McMurtry Art and Art History Building in 2015/16 and the renovation of Roble Gym in 2016/17, H&S continues to manage an ambitious capital program. Unprecedented capital investments are being made to develop the new science quad. The Science Teaching and Learning Center will open in 2016/17 and greatly improve undergraduate teaching. The Bass Biology Building is scheduled to begin construction in summer 2016. This facility and location will create an optimal environment for biologists working across traditional disciplines. The Physics Learning Center will relocate to Building 60 on the Main Quad in spring 2017. The new location will support continued growth in undergraduate enrollment in core physics courses.

SCHOOL OF LAW



PROGRAMMATIC DIRECTIONS

Stanford Law School (SLS) continues to make significant progress in strengthening the curriculum to meet the demands of tomorrow's legal profession, with more enhancements planned for the future. In addition, a terrific cohort of new faculty has been hired over the past few years, and students continue to excel in a variety of settings after graduation.

SLS's JD program continues to draw interest from an extremely talented pool of the strongest students in the country, while its advanced degree program (LLM) attracts a sophisticated group of foreign-trained lawyers. SLS graduates are thriving. Most JD graduates quite easily secure their first postgraduate jobs at private law firms (either directly or after prestigious clerkships). Other graduates work in government or at nonprofits, with the generous SLS Loan Repayment Assistance Program (LRAP) helping to ease their student debt. Most of the one-year LLM students return to their home countries, where the Stanford education, credential, and reputation generate significant job opportunities and professional success.

The Mills Legal Clinic is one of the premier legal clinical programs in the country. Much of what makes it impressive also makes it unique among its peers. Every clinic is directed

by a permanent member of the faculty who is a national leader in his or her field. The eleven clinics function as part of the same "law firm," which allows unique cross-clinic learning and teaching. Last, but perhaps most importantly, the clinics are a full-time experience for law students—a kind of legal residency—that genuinely transforms the pedagogical experience.

The Law School is working on other curricular initiatives that have originated in conversations among faculty about how to improve legal education. A few ideas for innovations have been identified, and SLS has gone from the drawing board to the classroom with two of these in the past three years: one in law and policy, and the other in global legal practice.

The Law and Policy Lab is designed to provide students more opportunities to do policy-relevant work. The lab encourages and assists faculty in enabling students to "learn by doing" policy analysis or legislative or regulatory drafting. Small groups of students work closely and intensively with faculty members on applied problems for clients. In the last two academic years, SLS has had more than 40 policy practicums on issues ranging from wildlife trafficking to election administration reform.

In 2015/16, SLS embarked on the second year of an initiative to better prepare students for global legal practice.

The need for this is obvious in today's world, where goods, capital, and labor move across borders with great frequency and relative ease. The global initiative has three elements: a new, pedagogically innovative course; courses that have an overseas component; and integration of cross-border and comparative perspectives into core courses in the regular curriculum.

Even as these two curricular initiatives get off the ground, conversations about what more can be done to improve the educational program continue. To seed these conversations, guest speakers talked to faculty and senior administrators about changes in the legal profession and the delivery of legal services, which led to informal strategic planning sessions with faculty. From these discussions, other possible areas of curricular focus have emerged.

CONSOLIDATED BUDGET OVERVIEW

The 2016/17 consolidated budget comprises total revenues and operating transfers of \$93.5 million and expenses of \$86.3 million, for an operating surplus of \$7.2 million. The school projects an increase in expendable fund balances of \$600,000, after projected transfers to assets of \$6.6 million, including \$3.6 million to student loan funds to cover LRAP obligations, \$1.5 million of endowment payout reinvested into funds functioning as endowment (FFE), and \$1.5 million to plant for the ongoing Crown Quadrangle renovation.

Consolidated revenue, exclusive of operating transfers, is anticipated to increase by 2.7% to \$60.6 million. Designated income will grow by about 3% to \$4.4 million, with special program fees generating most of this revenue. Expendable gifts are anticipated to be \$12.3 million, a

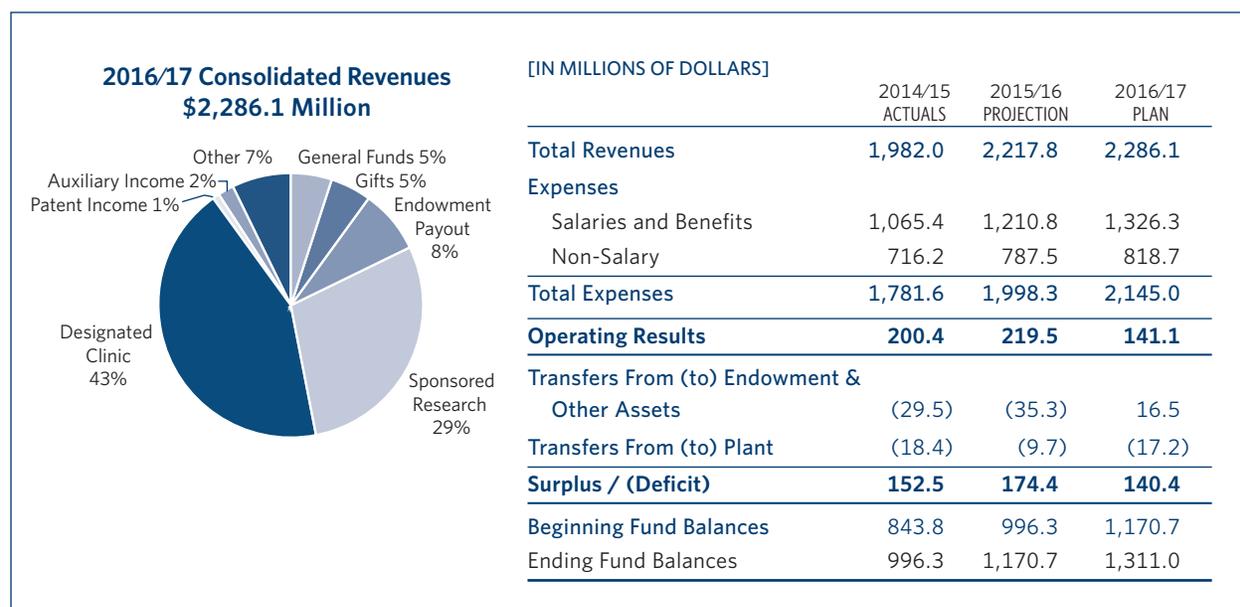
change of 2% from the 2015/16 level. While the university forecasts a flat endowment payout, the school's annual endowment income payout should rise by 2% to \$41.4 million, due to FFE invested in the previous year and new gifts made to endowment next year.

Sponsored research remains strong and will generate volume of \$2.7 million. Of this, \$1.1 million will be spent on the U.S. Department of State multiyear grant to support the Afghanistan Legal Education Project. SLS continues to receive sponsored funding for research in public service, human rights, and energy policy and finance, and has secured new support for research on legal topics ranging from internet, criminal justice, law to the biosciences.

Total consolidated budget expenses will increase to \$86.3 million, a rise of 4%. Compensation will grow by 4.5% to \$62.6 million, principally due to the hiring of new faculty. Non-compensation expenses will increase by 2.6% to \$23.7 million. Further detail shows that financial aid is growing by approximately 8% to \$8.4 million, while non-financial aid expenses will remain constant at \$15.3 million. Though total expenses are projected to rise in 2016/17, the slow growth in endowment payout may impact the budget. This is being monitored closely. If necessary, SLS is prepared to use reserves.

SLS consolidated expendable fund balances will increase by \$600,000 to \$25.3 million in 2016/17. Of this balance, \$13.8 million is classified as non-cash investments and not available for use. The remaining \$11.5 million is available: \$7.5 million is for restricted purposes, including academic programs, centers and financial aid, and \$4 million is unrestricted.

SCHOOL OF MEDICINE



PROGRAMMATIC DIRECTIONS

Stanford Medicine, an academic medical center, comprises the school, Stanford Health Care (SHC), and Lucile Packard Children’s Hospital Stanford (LPCHS). Its tripartite mission is to promote fundamental, clinical, and translational discovery; to train the medical leaders of tomorrow; and to transform patient care.

Stanford Medicine’s vision is to lead the biomedical revolution in precision health—to prevent disease before it strikes rather than to cure it after the fact. Precision health goes further than treating illness. It aims to help people stay healthy by leveraging its foundation in precision medicine.

Helping to champion this vision is the Precision Health Committee, which comprises leaders from across the university, the school, and the hospitals, and is led by the chair of the Department of Medicine. The committee is establishing goals and milestones for core areas of precision health. The newly formed Stanford Medicine Advisory Council also plays a key role in supporting the vision. This group of trustees and leaders from the university and Stanford Medicine is charged with assessing risks and resources and helping to develop precision health’s strategic platforms.

Biomedical data science will play a vital role in enabling precision health. The board has approved a new Department

of Biomedical Data Science. Strategic planning for the new department is under way with a focus on determining how it will work with related initiatives at the university.

To increase synergy, the school and hospital leaders are working toward shared priorities through the Integrated Clinical Strategy Committee. The committee meets regularly to explore ways to enhance the preeminence of the clinical enterprise, with a focus on fostering innovation. One example is the collaboration established in early 2016 between Stanford Medicine and Intermountain Healthcare, an integrated healthcare system based in Utah, which will lead to innovative projects in research, patient care, and medical education.

Stanford Medicine is also integrating its constituent organizations and bridging the components of its tripartite mission. ValleyCare Medical Center is being integrated into the academic mission with focuses on the learning healthcare network and population health sciences. The new series of quarterly symposia between clinical and basic scientists is fostering multidisciplinary collaboration on important issues in human health. All these efforts led to the school’s #3 rank on the National Institutes of Health’s 2015 list of the top 10 U.S. medical schools.

The school also continues to redefine the delivery of medical education. With expanded programming, outreach, and scholarships, the 2016 PhD and MD entering classes achieved record yields of underrepresented minorities, 28% and 22%, respectively.

CONSOLIDATED BUDGET OVERVIEW

The school projects total revenues and transfers of \$2,286.1 million in 2016/17 and expenses of \$2,145.0 million, yielding a net change in current funds of \$140.4 million after \$766,000 of transfers to asset. The major growth areas are healthcare services, sponsored research, and gift revenues. Offsetting this growth are the decline in patent revenues stemming from the ramping down of a key patent in 2015/16 and the projected zero payout to expendable funds pool (EFP).

Total revenues and transfers are projected to increase 3.1%, or \$68.3 million, to \$2,286.1 million in 2016/17. Key drivers include the following:

- In 2014/15, the school renewed a five-year funds flow agreement with SHC, with the hospital reimbursing the school's faculty and clinician services at a higher national benchmarked rate than before. The funds flow change spurs growth in healthcare services revenue of 11.4%, or \$110.3 million, to \$1,080.5 million in 2016/17. This growth compounds on a 13.4% or \$114.8 million increase between projected 2015/16 and 2014/15 which included one-time revenue payments in both fiscal years. These increases are also driven by activity and patient volume growth from clinical programs expansion, and incremental faculty and clinicians. In the renewed agreement, the dean receives two academic grants, one at a fixed amount and another at a progressive share of SHC's operating margin, beginning when it exceeds 4% of net operating revenues. These grants support the dean's academic initiatives in research and education while the higher payment of services to the departments helps support faculty retention and recruitment. The school is currently negotiating its funds flow agreement renewal with LPCHS, which will commence in 2016/17.
- Together with incremental faculty contribution, combined federal and non-federal sponsored research funding are projected to increase 5.5%, with 4.9% in federal and 7.0% in non-federal sponsored research growth.

- Gift revenue is projected to grow 5.1% owing to the projected success of the development campaign. Due to the anticipated low merged pool return in 2015/16, endowment income is projected to increase 2.2% and EFP is projected to have zero payout.

Expenses are projected to increase 7.3% or \$146.7 million to \$2,145.0 million in 2016/17. Major increases are:

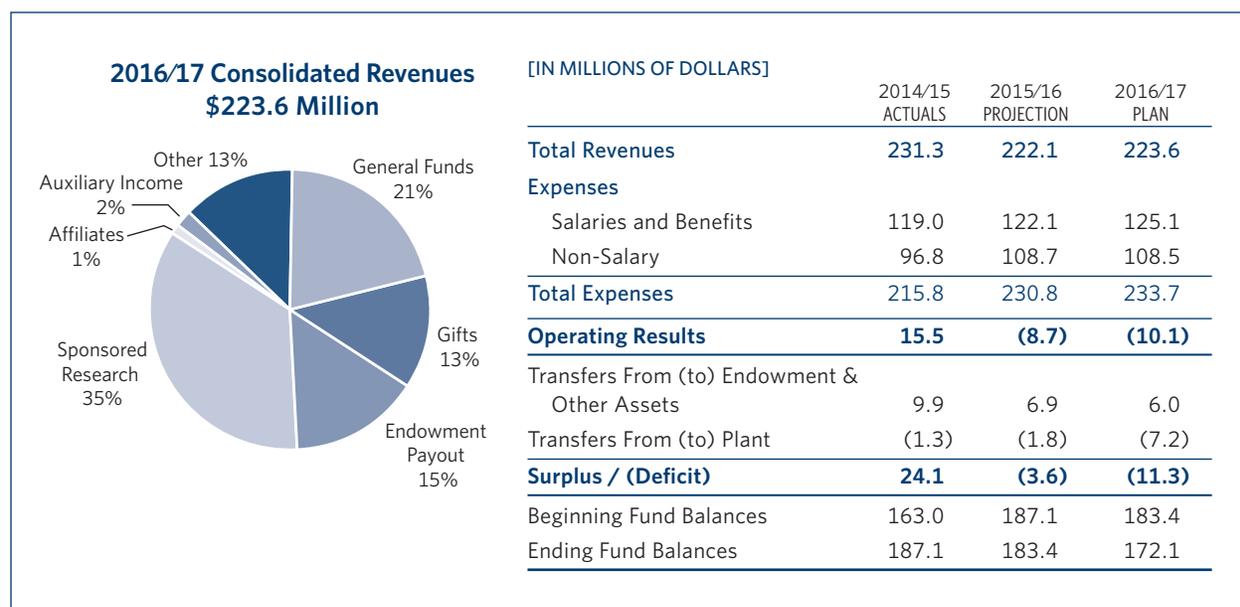
- Projected net recruitment of 47 faculty, 30 in the medical center line, 15 in the university tenure line, and 2 in the non-tenure line. 75 Clinician Educators are projected to join in 2016/17.
- Annual total compensation for faculty, clinicians, and staff are anticipated to increase 9.5% in 2016/17. The main drivers are increases from the renewed funds flow agreement that drive higher national benchmarked compensation to physician efforts, clinical activity growth, incremental recruitment, and the annual merit program.
- Growth in faculty and staff also creates space needs that lead to full-year occupancy of two leased facilities in 2015/16, a projected new lease in 2016/17, and increase in associated operations and maintenance expenses.

Transfers of \$17.2 million to Plant are projected for the Medical School Office building (MSOB) renovation, the Welch Road Modularity (C,D,E) demolition, construction of the Underground Service Centers, the Clinical Excellence Center (CEC I) and the ChEM-H and the Stanford Neurosciences Institute buildings. Transfers to Assets reflect investments to FFE and a projected transfer from the president to the school.

CAPITAL PLAN

Stanford Medicine has developed an integrated 20-year space master plan with faculty engagement and support. Planning and design for CEC I on Quarry Road and the Biomedical Innovation Building (BMI I) on Pasteur Drive are scheduled to begin in 2016 and complete in 2020. The CEC I project is jointly funded by the school, SHC, and LPCHS and is estimated at \$230.5 million. It will add 180,000 square feet of offices, conference spaces, a child care center, and other amenities. It will include an underground parking garage with over 1,000 parking spaces. The projected \$200.0 million BMI I project will add 200,000 square feet of research space. The estimated \$14.0 million MSOB renovation is also starting in 2016 and continuing through 2018.

VICE PROVOST AND DEAN OF RESEARCH



The Office of the Vice Provost and Dean of Research (DoR) is responsible for facilitation of faculty research and scholarship across all of the schools and departments and serves as cognizant dean for the 18 university-wide independent laboratories, institutes, and centers. The office oversees the implementation of research policies 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.

Stanford has a valued tradition of faculty research and scholarly initiatives that address complex problems across disciplinary boundaries. This tradition is reflected organizationally in the 18 independent laboratories, institutes, and centers. These provide intellectual and physical environments for research that invite scientific and scholarly dialogue, enhance collaborations among faculty from many disciplines, and increase the success of faculty in obtaining research support as well as opportunities for their work to have societal benefits and impact.

PROGRAMMATIC DIRECTIONS

Through all of its activities, the DoR seeks to support faculty competitiveness in research and scholarship. This goal will be pursued through the following four program objectives in 2016/17:

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

One strategic priority is establishing the Stanford Neurosciences Institute (SNI) and the Chemistry, Engineering and Medicine for Health Institute (ChEM-H), including planning the academic uses of the new research building that will house these newest interdisciplinary research institutes. Enhancing the opportunities for humanities scholarship through the Stanford Humanities Center and the Center for Spatial and Textual Analysis (CESTA) is another focus. The new Cyber Initiative has also been launched and is bringing together faculty from diverse disciplines to address the many social and policy impacts of digital technologies.

Enhancing the Stanford University Mass Spectrometry (SUMS) shared facility is another important priority, because researchers in life sciences need to receive actionable biological information about protein interactions in order to develop the well-founded research objectives needed for

competitive grant proposals. Scientific expertise is as critical as updated instruments in supporting the SUMS goals. The SUMS staff set up new instruments and assist faculty and their students in early-stage experiments that provide preliminary data for sponsored research proposals.

DoR contributes to the university's commitment to the humanities with resources for Stanford Humanities Center fellows, the Humanities Outreach program, and CESTA. CESTA assists faculty and students in the use of computer-based methods by providing reliable access to staff with expertise in spatial and textual analysis. In just three years, CESTA has grown to support 100 faculty, as well as post-doctoral, graduate, and undergraduate students and has achieved international preeminence in leadership in the digital humanities.

The Stanford Research Computing Center (SRCC) is another important resource, initiated in 2012 in recognition of the critical and growing importance of computation and analysis in all disciplines. It is now essential to Stanford's efforts to support research, education, and science. In addition to a purpose-built, energy-efficient high-performance computing data center, the SRCC manages large computing clusters, petascale storage systems, and myriad scientific applications. SRCC management, systems engineers, and computational scientists advise on the use and optimization of these shared resources. The SRCC also manages more than a dozen more specialized clusters; in total, it supports more than 8,000 faculty, staff, and students from all seven schools and SLAC. Increased focus on cybersecurity and compliance necessitates having professional technical staff to manage systems. Ensuring this support results in lower institutional risk and allows researchers to focus on their science, not infrastructure.

CONSOLIDATED BUDGET OVERVIEW

The 2016/17 consolidated budget for DoR shows total revenues of \$223.6 million and expenses of \$233.7 million, resulting in a net operating deficit of \$10.1 million. After estimated transfers of \$1.2 million to endowment, plant funds, and other assets, DoR projects a deficit of \$11.3 million. The deficit will be funded through reserves and is primarily driven by one-time initiatives. Some of the major initiatives include \$4 million of equipment purchase for the Stanford Synchrotron Radiation Lightsource, the Nano Shared Facility, and SRCC; and \$3.5 million in support of various research

initiatives throughout the university and in independent laboratories. As discretionary funding for one-time initiatives is diminishing, DoR will cultivate development opportunities to fund future programs.

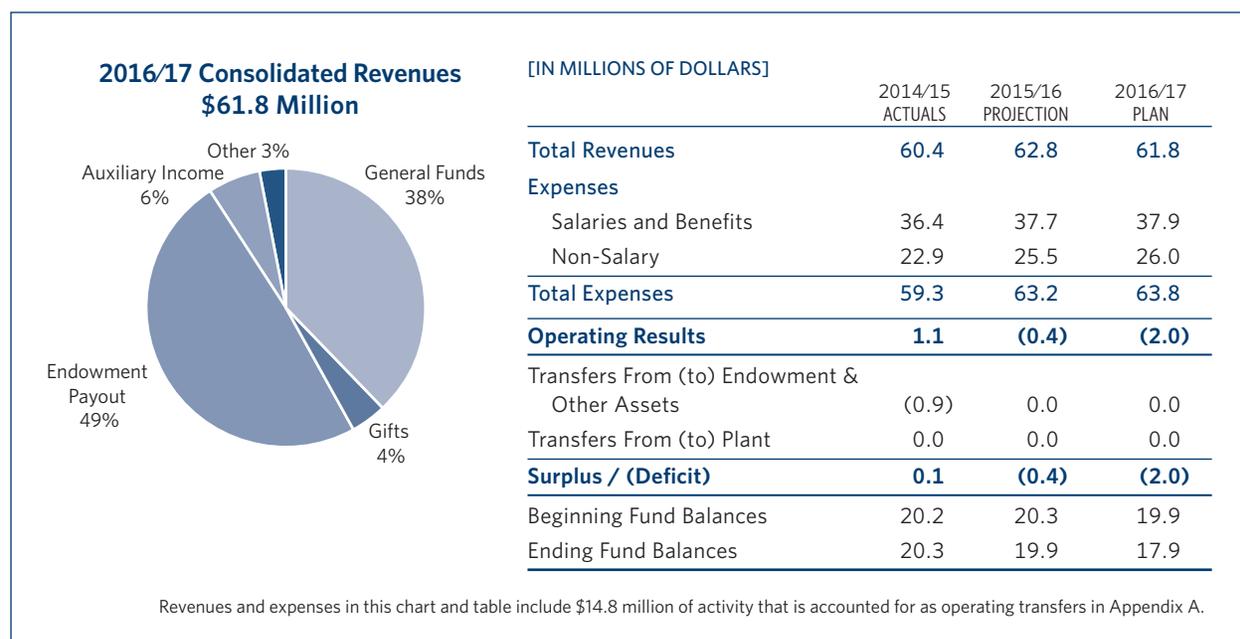
Total revenues and operating transfers in 2016/17 are projected to increase by \$1.5 million in 2016/17. However, excluding transfers, revenues are forecasted to decrease modestly by \$2.3 million from 2015/16. This is primarily due to a \$3 million decline in a non-federal sponsored research program at the Precourt Institute as the program is ramping down. Federal sponsored research is expected to remain flat from 2015/16 at \$53.6 million. Total expenses in 2016/17 are projected to increase by \$2.8 million, or 1.2%. Transfers to plant will be \$7.2 million, as a result of DoR support for the new ChEM-H/SNI building.

The use of endowment and expendable funds is mainly focused on multiyear, multidisciplinary research programs. Several DoR units rely on endowment payout for a portion of their funding. These units will need to reduce expenditures as a result of the zero endowment payout growth and potentially slow growth in future years. Strategies for addressing the flat endowment payout in 2016/17 range from utilizing reserves and exploring development opportunities to reducing the scope of programs, including less support to fellows and fewer workshops or outreach events.

CAPITAL PLAN

Stanford has an opportunity to create an integrated international studies hub in the Encina complex (Encina Hall and Encina Commons). With a targeted investment in Encina, Stanford can enhance the connection between the Freeman Spogli Institute (FSI) and the School of Humanities & Sciences (H&S), as well as their connections to the rest of the university, providing both FSI and H&S with urgently needed space to expand their academic programs. The project will seek to preserve the historic architecture of the Encina complex while improving its functionality. The most critical elements of the project will transform the courtyard and Encina Commons while freeing new space in Encina Hall for academic use. The key goals are to enhance the interior and exterior cohesion of the Encina complex, create an international studies hub, colocate Stanford Global Studies (SGS), and add office and flexible space to accommodate the growth of Political Science, SGS, and FSI. The project is currently in the design phase.

VICE PROVOST FOR UNDERGRADUATE EDUCATION



PROGRAMMATIC DIRECTIONS

Given developments ranging from increasing mental health issues to unrest around social issues, the Vice Provost for Undergraduate Education (VPUE) recognizes that the undergraduate academic journey must embrace learning and development outside as well as inside the classroom. With this focus on the whole student experience, VPUE has pursued programming that has emphasized and expanded experiential learning. This emphasis has enabled VPUE to continue the necessary work of executing the Study of Undergraduate Education at Stanford (SUES) requirements, while also accommodating new imperatives.

One such imperative in 2015/16 has been OpenXChange, a community-wide and community-driven initiative to strengthen and unify Stanford through purposeful engagement around issues of local, national, and global concern. OpenXChange programming—ranging from large events to structured conversations in dorms and community centers—has helped our community practice meaningful interchange and thoughtful listening. More than 6,000 students, faculty, staff, and other community members have taken part in conversations in areas such as race and criminal justice, climate change, and international policy. Spring-quarter programming will explore issues of immigration, mental

health, and educational inequity. OpenXChange has also fostered difficult discussions through new academic courses—Leadership Challenges, co-taught by John Etchemendy and Deborah L. Rhode, and The Ethics of Anonymity, led by Harry Elam. Although the initiative will conclude this year, VPUE and its partners will identify programmatic aspects that promise to continue the dialogue.

VPUE is also excited to be a major contributor to the Haas Center-led Cardinal Service Initiative—announced last fall by President Hennessy and begun as a VPUE-Haas partnership—which will contribute significantly to opportunities for experiential learning, as well as elevating the import of service in Stanford's undergraduate experience. The directors of community engaged learning (DCELS) will play a central role in the initiative, with three DCELS initially hired in 2013/14 in the fields of education, environment, and health. Since then, VPUE has added DCELS in engineering, human rights, and identity through a blossoming alliance among the Raikes Foundation; Humanities & Sciences; Engineering; Earth, Energy & Environmental Sciences; VPUE; the Handa Center; and Haas. DCEL efforts to build partnerships with schools and to engage with faculty across campus have yielded substantial results. Renamed Cardinal Courses, community engaged learning courses are offered

in 25 departments and programs across campus and have grown steadily in number, from 46 in 2013/14 to over 100 in winter quarter 2015/16. The program expects to meet its goal of 150 courses by 2020.

VPUE's newest pilot in experiential learning, the Stanford in New York program, opened successfully last autumn with seventeen students. Through an intensive academic quarter of study, reflective practice, and experiential learning, students hone their intellectual skills and capacities, develop their abilities as adaptive learners, and enlarge their creative confidence. The program center is in a beautiful leased space in Manhattan's Flatiron district, providing opportunities for engagement with one of the world's most dynamic cities. Autumn courses utilized the city as text, incorporating features of the local culture and environment to provide perspectives on arts, architecture, design, and urban studies. New York also provides unparalleled opportunities for students to engage in internships in dynamic organizations, including educational, arts, and cultural institutions; government and public agencies; social service organizations; and corporations. In 2016/17, Stanford in New York will offer two quarters (capped at 20 students each); the winter focus will be on media and finance.

In 2015/16, the Bing Overseas Studies Program (BOSP), VPUE's flagship program in experiential learning, is planning fourteen overseas summer programs, including a faculty-initiated program featuring service learning in Sri Lanka and expansion of the popular Oaxaca program. These programs provide access to high-impact overseas experiences for students such as athletes and engineers who may not be able to study abroad during the regular term. To increase access to summer quarters in Santiago and Cape Town, the provost has provided financial aid to eligible students, resulting in a near doubling of applications for both. Unfortunately, security concerns in the Middle East caused BOSP to cancel the Istanbul program last winter and next autumn.

The first cohort in the Leland Scholars Program (LSP), comprising students from underresourced high schools and first-generation backgrounds, will graduate this spring. LSP cohorts consistently demonstrate greater academic resilience, intellectual confidence, and a shared sense of belonging. In 2016/17, LSP will expand from 45 to 60 incoming frosh, expand from three to four weeks, and add a new writing and

oral communications focus. VPUE has confidence in LSP's success to date and its continued ability to help acclimate students to the rigors of Stanford.

VPUE has decided to discontinue the pilot Leadership Intensive program. Intended to provide students with opportunities to hone and practice leadership skills, this program for juniors never garnered the strong faculty support or demonstrated the student outcomes necessary for such a costly venture. In 2016/17, VPUE will pass on to Athletics' Leadership Development team those elements of the program that were deemed successful, allowing it to evolve in new directions.

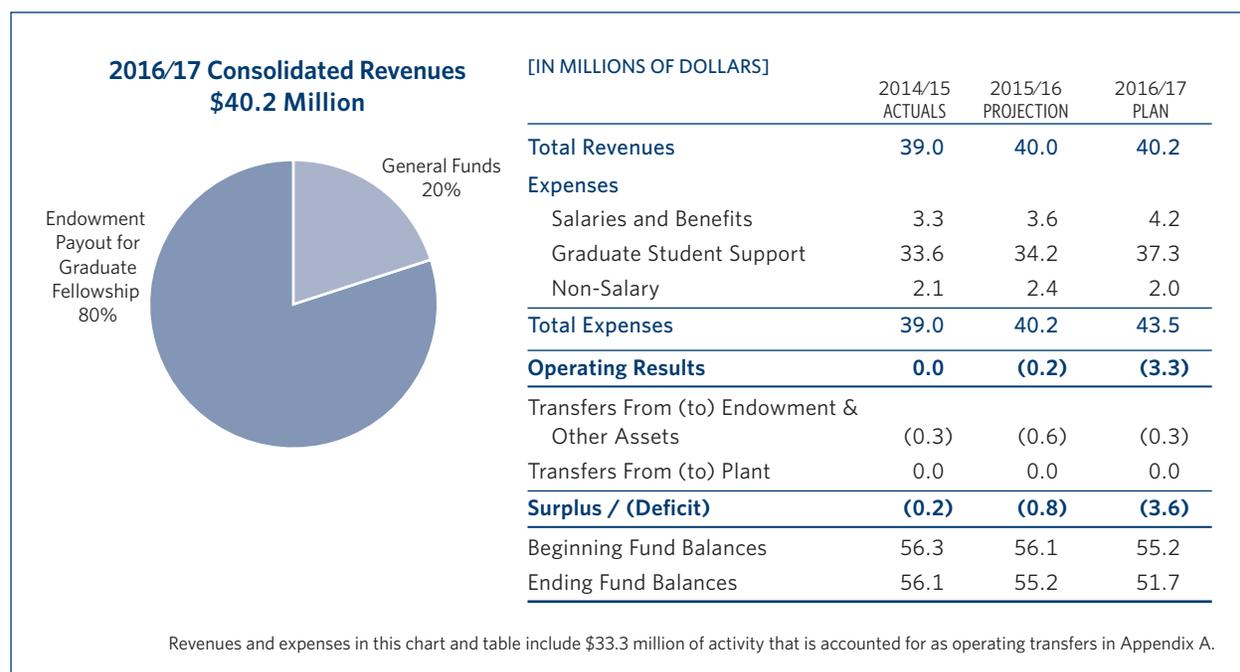
CONSOLIDATED BUDGET OVERVIEW

The 2016/17 consolidated budget shows total revenues and operating transfers of \$61.8 million and expenses of \$63.8 million, yielding an operating deficit of \$2.0 million. Revenues and transfers are expected to be \$1.0 million due mainly to flat endowment payout and net reduction of gift revenue of \$255,000. Annual giving to the Innovation Fund is decreasing from \$885,000 in 2015/16 to \$422,000 in 2016/17. Expenses are expected to grow by \$688,000, due primarily to operational costs related to the overseas studies and adding a second quarter to the Stanford in New York program.

VPUE's fund balance is expected to be \$19.9 million at the beginning of 2016/17. Anticipating a drop-off in expendable gifts, VPUE worked with the Office of Development to review restricted fund authorizations for more unrestricted use. The net result was a \$1 million increase in less restricted fund balances. Fund balances will absorb the deficit for 2016/17.

VPUE's financial priorities continue to be sustaining base programs, piloting new initiatives, and assessing educational outcomes. VPUE funds pilot programs with one-time university funds and Innovation Fund expendable gifts. Core programs are sustained by endowment payout and general funds. Each year VPUE assesses several of the pilot programs on achievement of their educational aims and cost-effectiveness. Some programs are changed; others are strengthened or planned for expansion; and the rest are sunset.

VICE PROVOST FOR GRADUATE EDUCATION



PROGRAMMATIC DIRECTIONS

The Vice Provost for Graduate Education (VPGE) plays a key leadership role, working collaboratively across the university's seven schools, to enhance the quality of graduate education for 9,200 students pursuing degrees in 90 degree programs and departments. VPGE addresses several critical university priorities: administering university-wide fellowships; fostering innovation by providing opportunities for students' professional development and serving as a catalyst for innovative initiatives within graduate programs; advancing diversity; and facilitating interdisciplinarity. VPGE's programs and fellowships reach roughly 4,500 graduate students (over 600 on fellowships) annually.

Growth and stability in funding sources for graduate students remain major goals across the university. Total funds for graduate student financial support reached a high of \$370 million in 2014/15, with 24% from external grants and contracts (down from 25% in 2013/14), 37% from restricted funds, 7% from designated funds, and 32% (down from 35% in 2013/14) from general and school funds. VPGE contributes 9% of this total, mostly as doctoral fellowships (full tuition and stipend) paid from one of six university-wide fellowship programs.

The largest is the Stanford Graduate Fellowships (SGF) Program in Science and Engineering, used to attract the best students in the world to doctoral study in these fields at Stanford. A diversity initiative within the SGF program was designed to encourage nominations of students who would add diversity, broadly defined, to their academic fields. This initiative incentivizes departments with additional SGF fellowship awards. New programs for students with SGFs and National Science Foundation Graduate Research Fellowships, branded as the Fellows Forum, include skill-building workshops targeted for students in the natural and social sciences, engineering, and mathematics, as well as networking opportunities. Topics include speaking to expert audiences, skills for mentoring in research, writing science for the public, and communicating effectively with advisors.

The Stanford Interdisciplinary Graduate Fellowships (SIGFs) have gained momentum, with 142 awarded so far. The fundraising goal of 100 fellowships was met in August 2014. VPGE programs and staff support the fellows' pursuit of pioneering research interests that span disciplines and their preparation for uncharted interdisciplinary career trajectories.

VPGE fellowship support will increase by 9% from 2015/16 to 2016/17. Since endowment growth is expected to be

flat, the number of SGFs will remain constant. The SIGF program, on the other hand, will be growing as pledge payments are received. The number of fellows will increase until the program reaches its goal of 33 new fellows per year. After the next few years, VPGE may need to adjust those expectations if the endowment income does not bounce back. Fellowship stipend and tuition amounts will increase by 3.5% next year. Fund balances will be used to cover this expected increase in graduate student support.

A top priority for VPGE is to provide innovative programs in collaboration with Stanford's seven schools to recruit students from diverse backgrounds and enhance their educational experiences at Stanford. The Diversifying Academia, Recruiting Excellence (DARE) Doctoral Fellowship Program for advanced PhD students has become nationally known, with 144 fellows thus far. Over 80% of DARE alumni are in the academic sector, and recently two have won prestigious early-career awards. VPGE has further expanded the Enhancing Diversity in Graduate Education (EDGE) Doctoral Fellowship Program, which supports incoming PhD students in five of the seven schools. EDGE provides mentoring and professional development resources to support the academic success of doctoral students in their first two years, with ongoing access to research funds in subsequent years. A new initiative provides diversity innovation funds, awarded on a competitive basis, to graduate students and postdocs across the university.

This year VPGE focused more intensively on developing new resources open to all graduate students under the banner of Graduate Professional Development (GPD), which includes expanded initiatives in leadership development and preparation for faculty careers. The GPD framework has become a more sophisticated interactive tool, and more graduate students are using it to assess their skill levels, determine priorities for gaining proficiency, and locate resources at Stanford—many of which are provided by VPGE. The major domains are specialized content knowledge and skills, teaching, communication, leadership and management, career development, and personal development. Where possible, programs are recorded for the GPD video archive, to be available for asynchronous use.

VPGE is committed to extending its reach with programs of the highest quality that use students' time efficiently, and with new pilots to address the highest-priority unmet needs. VPGE is pursuing a communications strategy that increases the visibility of available resources. A Grad Gateway was

developed for all incoming graduate students (gradgateway.stanford.edu), the monthly VPGE newsletter has over 10,000 subscribers, and the VPGE social media presence includes Facebook, Twitter, Flickr, and YouTube.

CONSOLIDATED BUDGET OVERVIEW

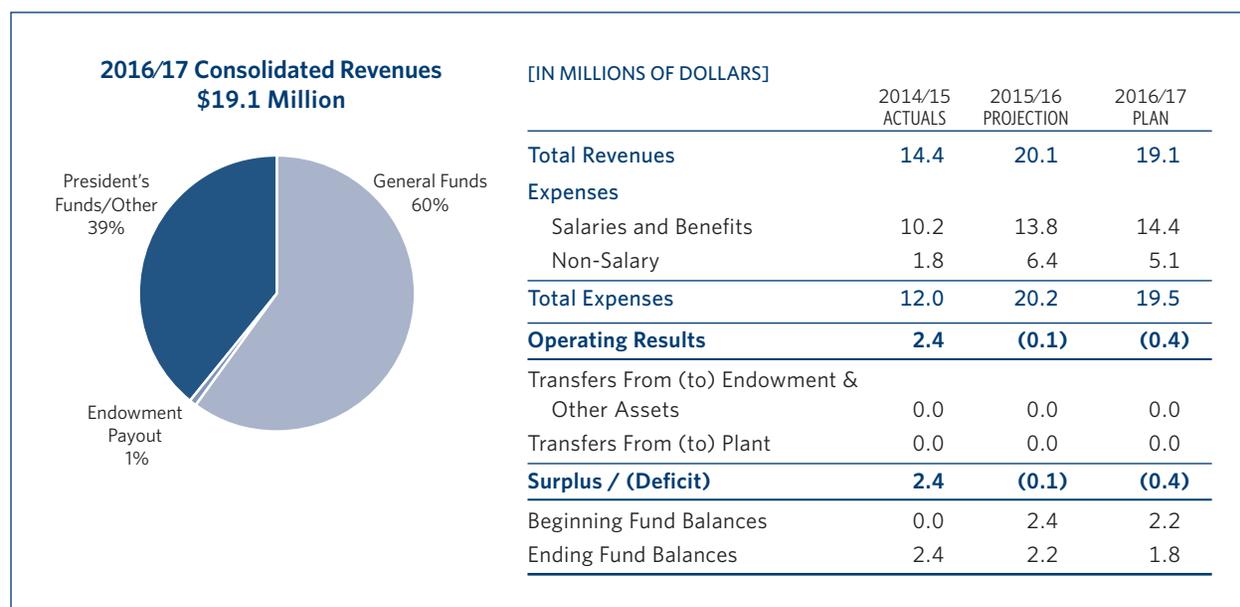
Endowment payout, general funds, and other transfers are expected to provide \$40.2 million in revenue for VPGE in 2016/17. Total expenses will be \$43.5 million, up from \$40.2 million projected for 2015/16. After asset transfers of \$300,000, a deficit of \$3.6 million is expected. Fund balances will be used to cover the deficit. The increased expenditures on innovative academic programs will reduce the consolidated fund balance to \$51.7 million at year-end.

Of the \$43.5 million in expenses, nearly 86% will go to direct graduate student support, about 10% to compensation and benefits, and 4% to programmatic non-compensation expenses. VPGE's graduate student support will increase from \$34.2 million in 2015/16 to \$37.3 million in 2016/17, which will be funded by spending down the endowment fund balance. Compensation and non-compensation expenses together will increase slightly to \$6.2 million.

The graduate student support will go through several fellowship programs. Most (\$33.4 million) will be transferred from endowment to department operating budgets to fund programs such as the SGFs. Other programs will be funded directly from general funds (\$3.5 million) and from expendable funds (\$430,000).

VPGE's graduate student funding and operational expense rate will continue to increase as both ongoing programs and new pilot programs are selectively extended to reach more graduate students in new ways. As VPGE approaches its tenth anniversary, a comprehensive assessment is planned to consider what is working, how to selectively scale up what is most valued, and how best to leverage cross-school initiatives. Students, recent alumni, faculty, and staff will participate in identifying unmet needs to address next steps or new ways and in proposing ideas for enhancing graduate students' educational experiences and success. Planning and evaluation costs, as well as next steps emanating from findings of that process, will be covered by fund balances. The planned increases in direct graduate student funding as well as programs to advance diversity and graduate students' professional development will steadily decrease the consolidated fund balance as well.

VICE PROVOST FOR TEACHING AND LEARNING



The Office of the Vice Provost for Teaching and Learning (VP TL) collaboratively promotes and advances the vibrant intellectual endeavor of teaching and learning at Stanford. This one-stop shop for teaching and learning provides instructor-facing and student-facing programs and services, innovative and technology-enhanced learning spaces, digital learning design, media production, and web platforms. VP TL also supports campus discussion, strategic planning, and innovation in teaching, learning, and educational programs.

PROGRAMMATIC DIRECTIONS

VP TL serves Stanford in four distinct and interrelated ways. First, VP TL hosts and fosters discussion on the future of higher education, engaging the broad Stanford community in constructing its future. Second, VP TL strives for meaningful innovation in teaching and learning for Stanford, including successful adoption of research-based methods for traditional classes, design and development of digitally supported learning activities, and innovative use of physical and virtual learning environments. Third, VP TL supports Stanford's leadership in learning research and practice. Finally, VP TL works collaboratively with schools, departments, centers, the Alumni Association, and other organizations to meaningfully expand the university's broad impact through new online educational programs and

learning opportunities consistent with Stanford's mission and values. In 2016/17 VP TL's strategic priorities are to facilitate inventing the future of Stanford, enhance teaching and learning for Stanford, support related research and the evaluation of VP TL programs, and help create external programs that broaden Stanford's impact.

Future of Stanford—Higher education may change significantly over the coming decade, at a rate that is difficult to predict. There is clearly broad public concern about the relevance of college and the value of advanced degrees for employment. Economic analysis suggests that college completion and ongoing professional development have become more essential for success in a labor market that does not generally offer long-term job stability. At the same time, students increasingly expect and demand choices that offer flexibility and the satisfaction of working on something that matters. Today's students respond to active and self-directed formal and informal learning that includes options to build, design, and interact with the world around them. In 2016/17 VP TL will facilitate the collective invention of Stanford's future by celebrating Stanford's successes and engaging faculty, instructors, students, and staff in discussion of new ideas and trends.

Teaching and Learning for Stanford—VP TL was created in 2015 to combine pedagogical, digital, media-based, and

learning-space resources that now allow integrated support for a wide range of course/curriculum development efforts. In 2016/17 VPTL will champion and catalyze the campus-wide discussion about learning spaces recommended in the 2012 Study of Undergraduate Education at Stanford Report. In collaboration with appropriate schools and other units such as the Vice Provost for Undergraduate Education and the Vice Provost for Graduate Education, VPTL will support high-impact course/curriculum design projects and help graduate students prepare to be the next generation of teaching leaders. VPTL will aggregate its student-facing services in Lathrop to create a full-service student center. Offerings include but are not limited to subject-based tutoring, academic success coaching, technology-rich spaces, makerspace, multimedia software and equipment, and technology training.

Research and Evaluation—While VPTL continually incorporates findings from others’ research into core activities, it is committed to serving Stanford by collaborating in the study of campus initiatives and systematically examining its own work to inform the design of courses, programs, and other student-serving activities. In 2015/16 VPTL led the implementation of an enhanced course evaluation system that offers it a tremendous opportunity in 2016/17 and beyond to facilitate the translation of evaluation results into data-driven course improvements. This positions VPTL to participate with others on campus in the future accreditation process, addressing the relationship between new accreditation standards and learning outcomes. In 2016/17 VPTL will continue to work with Stanford’s Center for Advanced Research through Online Learning (Institute for Research in the Social Sciences) on creating a data infrastructure to support the use of external learner data for faculty and VPTL staff and potentially a broader research community. A top priority of VPTL in 2016/17 is to support the Graduate School of Education’s leadership in research and practice in higher education learning.

External Programs and Broader Impact—Teaching externally, publishing books and articles, and conducting a range of programs that reach nonmatriculated learners are important parts of Stanford’s academic tradition. As digital technology opens new options to engage broader audiences in more effective ways, Stanford has the chance to develop meaningful learning opportunities that enrich its learning community, broaden its reach, and serve the public good. In 2016/17 VPTL will develop a landscape assessment with

other campus organizations that offer external programs based on teaching from schools and departments. This assessment will inform VPTL’s collaborative efforts toward strategically aligned online professional education programs in partnership with organizations on campus such as Continuing Studies, the Stanford Center for Professional Development, and Worldview Stanford.

CONSOLIDATED BUDGET OVERVIEW

The 2016/17 consolidated budget for VPTL projects total revenues of \$19.1 million and expenses of \$19.5 million, resulting in a planned net operating deficit of \$406,000 as the result of a one-time use of reserves for equipment refreshment.

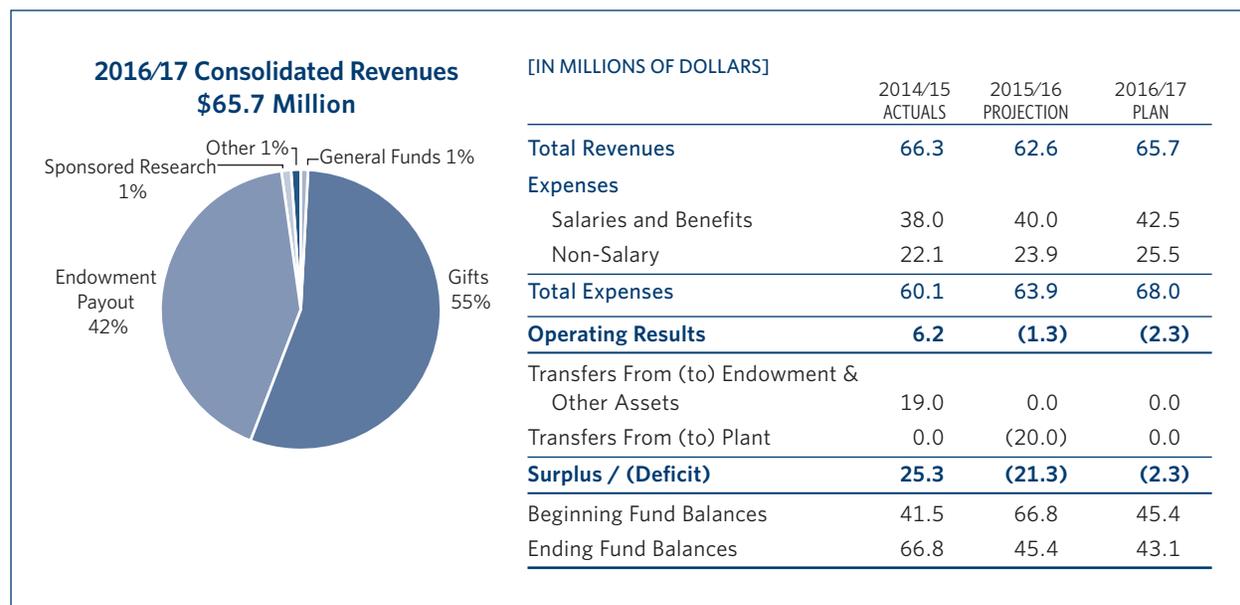
In 2016/17 VPTL will be in the third of four years of transition from presidential start-up funds to general funds at \$1 million per year. The transition will complete in 2017/18.

Total revenues in 2016/17 are projected to decrease by \$903,000, or 4.5%, from 2015/16. Although support for residential computing and revenue sharing from online courses is increasing by \$500,000, VPTL received one-time support from the president’s funds of \$1.5 million for the build-out of media production facilities at 408 Panama Mall, a project concluding in 2015/16.

Total expenses in 2016/17 are projected to decrease by \$642,000, or 3.2%, again mostly due to the one-time expenses for building out the media production facilities in 2015/16. Excluding that, non-compensation expenses are projected to increase by \$400,000, primarily due to equipment refreshment for the residential spaces. In addition, compensation expenses are estimated to increase by \$640,000, for fixed-term positions to complete the transition to the new Canvas Learning Management System and the new course evaluation system.

VPTL is projecting to have expendable fund balance of \$1.8 million at the end of 2016/17. Approximately 73% of VPTL’s reserves support equipment refreshment for the technology-rich spaces. Technology, audiovisual, and equipment refreshment is based on three-, four-, and five-year replacement cycles, depending on the type of equipment. The remaining fund balances support projects spanning multiple years, such as the transition from CourseWork to the Canvas Learning Management System, high-stakes testing for foreign language courses, and the media production facilities previously mentioned.

HOOVER INSTITUTION



PROGRAMMATIC DIRECTIONS

The Hoover Institution is approaching two milestones in its history: (1) in the summer of 2017, the opening of a new conference center and office building, the David and Joan Traitel Building, and (2) in 2019, the 100th anniversary of the founding of the institution. These two milestones provide opportunities to develop new programs and avenues for fundraising. In the next fiscal year, the institution will see additions to the fellowship and research program, continued growth in the collection of archival materials, improvements in access and outreach for the library and archives, and further expansion of a public policy educational program. Developing and consolidating administrative services and fundraising activities to support Hoover's centennial will receive attention, but will have a relatively small impact on the budget next year.

The strength of Hoover's research program lies in the exceptional ability of its scholars; thus refreshment and expansion of the fellowship continues to be a priority. For 2016/17, the budget includes two new senior fellows and one additional term appointment.

Hoover fellows engage extensively in collaborative projects, bringing teams of scholars from Stanford and the broader universe of intellectuals together to conduct focused inquiry in specific policy areas. Recent collaborative efforts have

emphasized an educational focus as well. A Hoover team working in conjunction with the Stanford Cyber Initiative will continue to support research and education in cybersecurity, including conferences, workshops, and a planned boot camp for congressional staffers. Similarly, the Working Group on Intellectual Property, Innovation, and Prosperity will hold its annual two-week Summer Teaching Institute on the Economics and Politics of Regulation in 2016/17.

To complement existing initiatives, Hoover plans to launch several new activities, including engagement with a university-wide initiative on climate change; a project to apply modern computational methods to problems in fiscal policy, macroeconomics, and financial regulation; and research into the relationship between nonviolent Islamic missionary activities and Islamic extremism.

Growth in the library and archives continues per the strategic plan developed in 2013/14. For 2016/17, Hoover will expand its collecting efforts in the Middle East, North Africa, and Japan's modern diaspora. The library and archives will increase their visibility with Stanford students, scholars, and the public by continuing and promoting more broadly their offerings of workshops, lecture series, fellowships, and public exhibitions. Finally, Hoover has transferred its digital holdings to Stanford IT Services and has implemented a new digital infrastructure and content management soft-

ware. As a complement to this new infrastructure, Hoover is proceeding with digitization on two fronts: (1) digitizing its most important and endangered sound, video, and paper collections in house, and (2) working in partnership with Eastview Information Systems, a commercial firm, to digitize Japanese newspapers published in the United States, rare Chinese publications, and Afghan periodicals. Through this partnership, a similar project will be launched soon to digitize 5,000 rare newspaper titles held by Hoover and Stanford University Libraries.

Hoover has long had an active dissemination program using printed publications, the Web, social media, podcasts, and video to communicate its work. Building on this experience, the Educating Americans in Public Policy initiative focuses on the production of educational materials pertinent to current policy debates. Pilots are under way to create (1) short animated videos and live-action “policy parables” in specific subject areas; (2) edited and augmented segments from existing online courses taught by Hoover fellows that are targeted for broader audiences; and (3) digital communities or “circles” to discuss current policy topics. Successful pilots will be extended in 2016/17, and the content will reside on a unique webpage that will seamlessly integrate with the newly redesigned main Hoover site.

As Hoover prepares for the opening of its new building and consolidates recent program growth, it is restructuring administrative processes and personnel and making investments in information technology in an effort to increase efficiency. And, in advance of centennial fundraising efforts, regional development capacity has been expanded. An increase in expenses for these two efforts is anticipated for this fiscal year and next.

CONSOLIDATED BUDGET OVERVIEW

For 2016/17, Hoover projects revenues of \$65.7 million and expenses of \$68.0 million, for an operating deficit of \$2.3 million. Net of these results, end-of-year fund balances are expected to be \$43.1 million, with reductions occurring primarily in restricted reserves.

Revenues are projected to increase by \$3.1 million, or 5.0%, over 2015/16. While endowment income is expected to grow by only 1.2%, Hoover is optimistic about accelerated

expendable giving due to recent investments in the development function. Expendable gifts are expected to increase by \$2.9 million, or 8.8%, to \$35.9 million.

Expenses are expected to grow more than revenue, increasing by \$4.1 million, or 6.5%. Real growth of expenses is concentrated in areas where large restricted balances have accumulated due to past fundraising successes and significant prepayment of long-range pledges, particularly for the Educating Americans in Public Policy initiative. There will be drawdown of these accumulated balances in 2016/17.

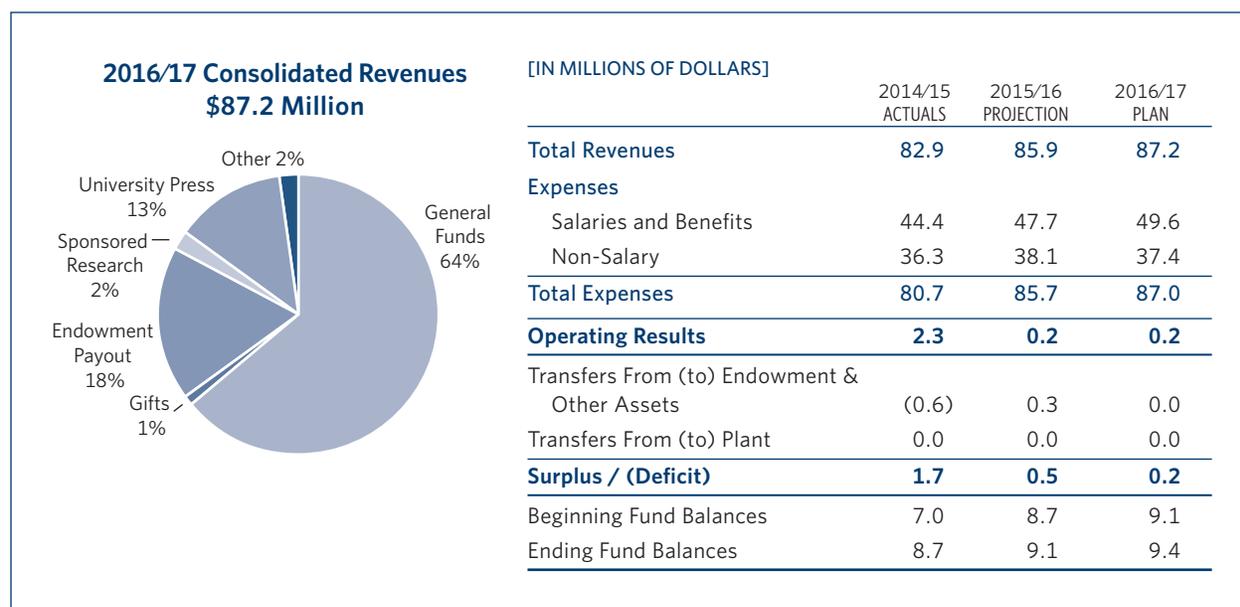
Expense growth will be limited to available revenue and is expected in the following areas:

- Two new senior fellow appointments and one additional term appointment are budgeted, with additional support staff and research funds required. In conjunction with these appointments and other recent fellow additions, research activity will increase.
- Library and archives growth will occur, primarily due to curatorial expansion and digitization partnerships with outside vendors.
- Increased expenses for professional services, scholar payments, and general program costs for the Educating Americans in Public Policy initiative will be realized.
- Recent and expected additions to administrative and development staff will have full-year budget impact in 2016/17.

CAPITAL PLAN

Construction of the David and Joan Traitel Building (formerly the Hoover Institution Conference Center and Office Building) continues on schedule, with project completion expected in the summer of 2017. The building will provide 50,340 usable square feet of new capacity in both offices and conferencing facilities. The total project cost is \$65.0 million, \$57.4 million for construction of the building and \$7.6 million for connective elements. Hoover has received signed pledges for expendable gifts that will fully fund this project. Additionally, Hoover has initiated a programmatic study of its three existing buildings to assess and propose a plan for their phased renovation after the David and Joan Traitel Building is complete.

STANFORD UNIVERSITY LIBRARIES



PROGRAMMATIC DIRECTIONS

To ensure that Stanford scholars and students continue to be well supported with the wide variety of information resources and services they require, Stanford University Libraries (SUL) has implemented a dynamic process to re-allocate assets to best address those needs. Acquisition of pedagogical and research materials is key, but more critical is the allocation of the attention of well-qualified staff that have provided reliable support for teaching, learning, and research over the years. This balance between dynamic engagement and stable and predictable service is the hallmark of modern academic information services in this rapidly evolving, digitally centric world.

SUL continues to be challenged by the tension between the profit-making drive of the scholarly publishing industry and the interests of the providers of content to that industry, namely, academic authors. Market consolidation and increasing profit margins for publishers drive the annual cost of information resources, particularly scholarly journals, which grow at rates that are multiples of the consumer price index. As a result, increases to the Library Information Budget, which funds those purchases, have not kept pace with increasing costs. SUL must begin to reduce the number of ejournals and ebooks to which it subscribes, though

multiyear contracts will allow that reduction to take place over several years.

Over the years, these reductions may cause some pain, and Stanford will increase its reliance on acquiring information on demand and by coordinating its collection development programs with partners, such as the General Libraries at UC/Berkeley and the libraries of the Ivy+ institutions. While these are plausible routes to take in the context of declining purchasing power in the Library Information Budget, there are costs, lost time and momentum in scholarly processes while awaiting “just in time” acquisition and missed associations among information sources now routinely available, but soon disappearing.

Looking at the bigger picture, SUL and the University Budget Office will attempt to revise the formula that increases the Library Information Budget based on industry data. Further, there is an understanding that deans will work with SUL and other campus agencies to consider the costs of adding a program beyond just the salaries of the professoriate and some graduate assistantships. Making this sort of holistic budgeting routine will take time and patience but will ultimately benefit the programs. Related to such efforts, SUL is pleased to be able to provide long-needed support for the

South Asian Studies program by adding a cataloger with multilingual qualifications and appropriate experience.

Beyond purchased collections, SUL has also seen a significant increase in demand for use of the Stanford Digital Repository (SDR), the digital archive SUL developed and operates, for data management plans and data preservation. These plans are now required elements of funded proposals from many federal agencies, and the SDR is well positioned to provide this needed service, but it is not without cost. SUL is working with the Vice Provost and Dean of Research to develop a funding mechanism for it.

While funding is a concern, the SDR is setting the standard for preservation archives in academia, and SUL has provided leadership in developing a cloud-based implementation of the service, known as Hydra-in-a-Box, for use at smaller institutions. SUL has also led the open-source, collaborative development of widely adopted interfaces and applications for the use of digital and digitized source materials, such as the International Image Interoperability Framework and the Mirador viewer.

SUL is excited to begin work on the digitization of an immense collection of foreign newspapers acquired by the Hoover Library and SUL over the past 50 years. Over the next decade, the project will both preserve this rapidly degrading resource and improve access to the newspapers' contents.

A major challenge facing Stanford's libraries is recruiting and retaining librarian candidates, particularly in specialized

positions. Stanford is losing excellent younger librarians who are simply unable to afford housing in the Bay Area. The difficulties Stanford's libraries and museums face might be addressed by improving salaries and/or by developing a staff housing program for selected categories of staff vital to the functional health of the university.

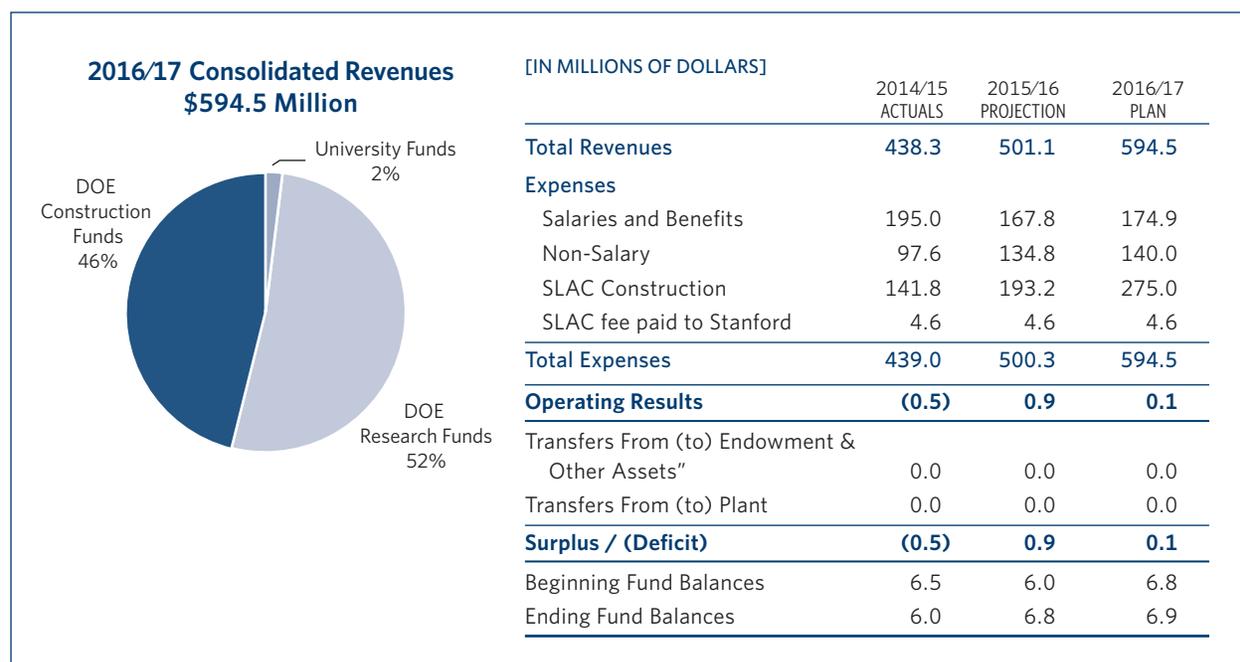
CONSOLIDATED BUDGET

Consolidated revenues and transfers are expected to total \$87.2 million: \$53.3 million in base general funds, \$16.8 million in restricted funds, \$11.0 million in auxiliary revenue and transfers, and \$6.1 million in designated and other funds. Consolidated expenses are projected to total \$87.0 million, resulting in an operating surplus of \$225,000. Compensation expenses are budgeted at \$49.6 million, library materials acquisitions at \$23.1 million, and other operating expenses at \$14.3 million.

SUL's base operating budget is projected to grow 1.3% from the 2015/16 level. SUL will also receive the fourth installment of \$2.6 million in one-time presidential funds to continue its digital library efforts.

Fund balances at the end of 2016/17 are expected to be \$9.4 million. SUL projects balances of \$1.5 million in restricted expendable funds, \$4.4 million in restricted endowed funds, \$2.2 million in LOCKSS (Lots of Copies Keep Stuff Safe) reserves, \$900,000 in LOCKSS auxiliary operations, and \$400,000 in designated funds.

SLAC NATIONAL ACCELERATOR LABORATORY



PROGRAMMATIC DIRECTIONS

Stanford University operates SLAC for the Department of Energy (DOE) through a management and operating contract. SLAC is currently negotiating a new contract with the DOE that will reduce the magnitude of DOE requirements in favor of increased reliance on Stanford requirements, allowing SLAC to take greater advantage of existing Stanford systems. This contract approach is considered revolutionary in the DOE system.

SLAC has two primary, integrated strategic goals: innovating and operating premiere accelerator-based facilities and leveraging those facilities to develop new scientific pursuits.

Scientific User Facilities

SLAC's user facilities draw more than 2,700 researchers from around the world annually, with Stanford users representing more than 10%. The laboratory operates two leading X-ray scientific user facilities: the Linac Coherent Light Source (LCLS) and the Stanford Synchrotron Radiation Light Source (SSRL). LCLS is the world's first hard X-ray free electron laser (FEL). This facility has transformed the field of X-ray science and positioned SLAC as a world-leading center for FEL science. To maintain preeminence, SLAC and

the DOE are pursuing a vigorous series of developments (LCLS-II) that will expand the accelerator's range of X-ray energies, significantly enhancing SLAC's scientific capability and capacity.

SSRL provides X-ray beams and advanced instrumentation for research ranging from energy storage to drug discovery. SSRL facilitates tremendous scientific synergy between SLAC and Stanford. A large number of faculty groups from four of Stanford's schools pursue research enabled by SSRL. In addition to past investments, Stanford is contributing funding towards a new macromolecular crystallography beamline to be completed in 2017, which will enable structural biology research in areas of biomedical, biological, and bioenergy sciences. SSRL is also building a new energy materials beamline that will further leverage materials research programs at Stanford.

SLAC also operates the Facility for Advanced Accelerator Experimental Tests (FACET), which focuses on next-generation accelerator concepts. Additionally, SLAC runs the instrument science and operations center for the Fermi Gamma-ray Space Telescope (FGST), a joint DOE/NASA mission.

Science Programs

SLAC recognizes that providing world-class research facilities is not enough. To ensure that the best science is carried out at SLAC, the laboratory must continually take a leadership role in identifying and pursuing new science. In addition to large-scale user facilities, the core SLAC competencies recognized by the DOE include advanced instrumentation, condensed matter physics and materials science, chemical and molecular science, accelerator science and technology, and particle physics. Additionally, SLAC is partnering with Stanford to invest in biosciences in order to build on structural biology research at SSRL and become recognized in this core scientific area as well. Finally, applied programs extend SLAC's capabilities into applied energy research.

SLAC continues to be a major partner in the ATLAS experiment at the Large Hadron Collider at the European Organization for Nuclear Research (CERN). The ATLAS experiment explores the properties of the Higgs boson while searching for physics beyond the Standard Model of particle physics. SLAC's cosmic frontier program includes the FGST, research and development efforts for the next generation of dark matter experiments, and construction of the ground-based Large Synoptic Survey Telescope (LSST).

The SLAC Science Directorate pursues much of its research through joint Stanford-SLAC institutes, including the Photon Ultrafast Laser Science and Engineering Center (PULSE), the Stanford Institute for Materials and Energy Sciences (SIMES), and the SUNCAT Center for Sustainable Energy through Catalysis. The new PULSE ultrafast electron diffraction "electron camera" captures some of nature's speediest processes, revealing trillionth-of-a-second motions of electrons and atomic nuclei. SIMES is developing next-generation battery technologies, and SUNCAT is expanding carbon dioxide fuel research with a five-year, \$7.5 million grant from the DOE's Joint Center for Artificial Photosynthesis.

CONSOLIDATED BUDGET OVERVIEW

SLAC projects a balanced budget of \$594.5 million for 2016/17, with \$319.5 million slated for direct research and \$275.0 million for major capital projects. The DOE Office of Science funds 98% of the SLAC budget; other DOE offices and other federal and non-federal agencies provide the balance.

Consolidated expenses will increase 18.8% in 2016/17 from the \$500.3 million planned for 2015/16. The majority of this

growth is attributable to the construction of LCLS-II, which is explained in more detail in the Capital Plan section below. The direct research programs reflect growth over 2015/16 largely consistent with SLAC's strategy of 2% annual growth from its traditional funding source (DOE Office of Science) and growth of \$10 million per year from new markets. Progress against the SLAC growth agenda, while relatively short in run time, is encouraging. SLAC is actively managing and refining a proposal pipeline and has prepared business plans for all directorates within the laboratory.

Of its fee of \$4.6 million, included in the revenue above, SLAC spends roughly \$1.8 million of general funds plus roughly \$1 million of director discretionary funds each year, returning nearly \$2 million per year to the university.

CAPITAL PLAN

SLAC's long-range development plan supports future scientific program direction by consolidating research activities, upgrading infrastructure, renovating facilities, and demolishing substandard structures. This plan serves as a working document and resource guide beyond the immediate future of planned capital projects.

SLAC's large DOE-funded projects enable its research to stay at the cutting edge of science. The LCLS-II project builds on the success of LCLS to ensure that the United States maintains a world-leading capability for advanced research in energy, materials, biology, and chemistry. In 2015 the DOE approved additional scope, including a second cryoplant cooling system, bringing the total project cost to \$1,045 million. The \$168 million, 3.2-gigapixel LSST will determine the properties of dark energy with high precision.

SLAC's building projects provide the laboratory and office spaces necessary for scientists, engineers, and staff. The \$65 million Science and User Support Building (SUSB) was completed in September 2015 and houses nearly 100 SLAC personnel. SUSB provides an inviting experience for visitors and users at the front entrance to SLAC. The shell of the university-funded Photon Sciences Laboratory Building will be completed in September 2016, making way for the \$57 million DOE-funded outfitting of the first two floors in early 2017 and tentative occupancy in 2018. This environmentally sustainable facility will include wet labs, dry labs, characterization, and cleanroom spaces, as well as office and collaboration space to support SLAC's photon science mission.

