



YALE



FINANCIAL REPORT 2015–2016

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FRONT COVER: Various views across Yale University, clockwise beginning in the top left corner: (1) courtyard of Timothy Dwight Residential College, (2) aerial view of campus, (3) student participation in the December 2015 “Introduction to Computing and Programming” fair in Commons Dining Hall at the Schwarzman Center, and (4) Commencement 2016. Background for the photographs is an actual stone carving made into a brick found on The Hall of Graduate Studies.

Photography by Michael Marsland, University Photographer

Highlights

| Five-Year Financial Overview (\$ in millions) | Fiscal Years | | | | |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2016 | 2015 | 2014 | 2013 | 2012 |
| Net Operating Results - Management View | \$ 37.3 | \$ 17.3 | \$ 13.1 | \$ 15.7 | \$ 67.3 |
| Financial Position Highlights: | | | | | |
| Total assets | \$ 36,957.3 | \$ 36,971.7 | \$ 34,523.0 | \$ 31,253.2 | \$ 31,310.6 |
| Total liabilities | 10,418.8 | 9,586.5 | 8,722.2 | 8,796.3 | 10,818.9 |
| Total net assets | \$ 26,538.5 | \$ 27,385.2 | \$ 25,800.8 | \$ 22,456.9 | \$ 20,491.7 |
| Endowment: | | | | | |
| Net investments, at fair value | \$ 25,413.1 | \$ 25,543.0 | \$ 23,858.6 | \$ 20,708.8 | \$ 19,264.3 |
| Total return on investments | 3.4% | 11.5% | 20.2% | 12.5% | 4.7% |
| Spending from endowment | 4.5% | 4.5% | 5.0% | 5.3% | 5.1% |
| Facilities: | | | | | |
| Land, buildings and equipment, net of accumulated depreciation | \$ 4,779.4 | \$ 4,510.3 | \$ 4,412.8 | \$ 4,347.3 | \$ 4,254.7 |
| Disbursements for building projects | \$ 498.1 | \$ 302.0 | \$ 270.5 | \$ 277.0 | \$ 284.5 |
| Debt | \$ 3,533.7 | \$ 3,557.8 | \$ 3,319.8 | \$ 3,582.4 | \$ 4,096.2 |
| Statement of Activities Highlights | | | | | |
| Operating revenues | \$ 3,450.0 | \$ 3,381.9 | \$ 3,109.9 | \$ 2,936.9 | \$ 2,818.6 |
| Operating expenses | 3,364.2 | 3,187.6 | 3,058.9 | 2,976.1 | 2,812.8 |
| Increase (decrease) in net assets from operating activities | \$ 85.8 | \$ 194.3 | \$ 51.0 | \$ (39.2) | \$ 5.8 |
| Five-Year Enrollment Statistics | 2016 | 2015 | 2014 | 2013 | 2012 |
| Freshman Enrollment Class of: | '19 | '18 | '17 | '16 | '15 |
| Freshman applications | 30,236 | 30,932 | 29,610 | 28,977 | 27,283 |
| Freshmen admitted | 2,034 | 1,950 | 2,031 | 2,043 | 2,109 |
| Admissions rate | 6.7% | 6.3% | 6.9% | 7.1% | 7.7% |
| Freshman enrollment | 1,364 | 1,360 | 1,359 | 1,356 | 1,351 |
| Yield | 68.8% | 71.5% | 68.2% | 68.4% | 65.2% |
| Total Enrollment: | | | | | |
| Yale College | 5,532 | 5,477 | 5,427 | 5,399 | 5,345 |
| Graduate and professional schools | 6,853 | 6,859 | 6,591 | 6,424 | 6,440 |
| Total | 12,385 | 12,336 | 12,018 | 11,823 | 11,785 |
| Yale College Term Bill and Financial Aid: | | | | | |
| Yale College term bill | \$ 62,200 | \$ 59,800 | \$ 57,500 | \$ 55,300 | \$ 52,700 |
| Average grant award for students receiving aid | \$ 48,294 | \$ 46,445 | \$ 44,785 | \$ 42,100 | \$ 39,840 |

Message from the President

When I was appointed as Yale’s president, I articulated my vision for a university that would seek to be ever more accessible, unified, innovative, and excellent. In the three years since then, our university leadership, faculty, staff, students, alumni, parents, and friends have embraced these ambitions enthusiastically, working with me—and with each other—to propel Yale toward a stronger future. The 2015-2016 Financial Report demonstrates the impact of our collaborative approach. As described in detail by our chief financial officer in the following pages, the university’s solid financial footing—achieved through the concerted efforts of so many members of our community—is crucial to our ability to undertake the initiatives that will reinforce our place as a world-class institution.

We are making Yale more *accessible* first and foremost by opening two new residential colleges that will allow us to increase undergraduate student enrollment by 15 percent. We have also increased our investment in programs to bolster the diversity of our faculty and to enable students from all backgrounds to take the fullest advantage of their Yale education. To ensure that we attract the very best students throughout the United States and the world, we are improving our scholarship programs in all of our schools; in Yale College, 51 percent of the incoming class is receiving need-based financial aid, and our efforts to boost socioeconomic diversity are reflected in the nearly 16 percent of students who qualified for Federal Pell Grants. The reopening of the Beinecke Rare Book & Manuscript Library, the renovation of the Yale Center for British Art, and the expanding international presence of the Institute for the Preservation of Cultural Heritage are just a few examples of how we make Yale’s rich resources and expertise available to visitors, students, researchers, and communities here in New Haven and around the globe.

To realize a more *unified* Yale, we are investing in ways to create new and vibrant connections within and across the breadth of our research and teaching. This strategy is exemplified by our plans for the renovation of 320 York Street—which will be reborn as a central hub for the humanities, reinvigorating our excellence in an area of longtime signature strength—and for the construction of the new Yale Science Building on Science Hill, designed to support new eminence in the sciences by fostering engagement and creating opportunities for innovation that span the disciplines. And when our newly unified Center for Teaching and Learning moves into its permanent home in the York Street wing of Sterling Memorial Library, it will gather together educational programs and resources—and the students and faculty who use them—in a beautiful new collaborative space.

The pursuit of a more *innovative* Yale is manifested in our physical campus—notably, in the “maker space” of our Center for Engineering Innovation & Design, which is used by students and faculty

from every imaginable vein of inquiry – and in the students, faculty, and staff who populate it. To paraphrase our provost, Yale has always been a place where one can study conducting in the morning and conductivity in the afternoon, learning from the very best in each of those fields. Our investment in interdisciplinary research at the West Campus, the School of Medicine, and Science Hill is resulting in cutting-edge innovation and discoveries in sustainable energy, quantum computing, and medical therapies. And our recently expanded focus on computer science is channeling student interest and stellar faculty expertise in exciting new directions.

In the service of an ever more *excellent* institution, we are shaping Yale for years to come: by honing the physical campus in support of our core mission of education and research; by reinforcing and building on Yale’s iconic strengths; and by investing in those key areas where, to be a preeminent research university, we cannot afford to be weak. An excellent university depends on excellent leadership, and our exceptional cohort of deans, vice presidents, program and department heads, and many others lend their vision to our schools and units and share my commitment to fostering new connections that span the campus. In the most recent years we have recruited or promoted eight new deans out of a total of fifteen (six of them are women), as well as five vice presidents – all of whom contribute vitally to the university’s fiscal stewardship in support of our strategic goals.

I close by highlighting our university mission statement, which reflects Yale’s abiding commitment to leadership, service, and diversity:

Yale is committed to improving the world today and for future generations through outstanding research and scholarship, education, preservation, and practice. Yale educates aspiring leaders worldwide who serve all sectors of society. We carry out this mission through the free exchange of ideas in an ethical, interdependent, and diverse community of faculty, staff, students, and alumni.

I offer my appreciation to all those who have helped us to achieve the financial results outlined in this report, and look forward to our continued partnership in the coming years.



Peter Salovey
President and Chris Argyris Professor of Psychology

Message from the Vice President for Finance and Chief Financial Officer

The university finished the year ending June 30, 2016 with solid financial results, generating a surplus from operations on a GAAP and Management View basis. The surplus from operations on a GAAP basis was \$86 million or 2.5% of operating revenues. This result was lower than the prior year primarily due to the recognition last year of the generous gift from Charles Johnson '54 related to the Benjamin Franklin and Pauli Murray residential colleges now under construction. The balance sheet remains strong with \$26.5 billion in net assets.

The Endowment remains the single largest source of income for Yale's operations. In FY16 the Endowment contributed \$1.2 billion of income or 33% of total operating revenues. To put this remarkable figure into perspective, over the past five years Yale has spent more than \$5 billion from the Endowment or roughly a quarter of its market value, and in the next five years Yale intends to spend a similar percentage of the Endowment once again - and continue to do so in the future. Even with this significant level of spending, the Yale Endowment has more than maintained its value, allowing Yale to continue to grow support for financial aid, research and education programs. This impressive feat has been possible only through the exceptional performance of the Yale Investments Office under the leadership of David Swensen.

The surplus from operations for the year shows the university is in a solid financial position with the resources to carry out the varied activities that support its mission. Even so, all three of the university's largest sources of revenue (endowment income, medical services income and grants and contracts income - which together comprise 78% of Yale's revenue) are experiencing considerable pressure due to factors such as financial market uncertainty, health care regulation, and federal budget legislation. This situation is a reminder that Yale will need to continue to manage its finances prudently, make hard choices about where to invest, and recognize that funding new initiatives will require new financial resources or a reallocation of existing ones. The Financial Results section of the annual financial report contains information on the variation in the size and mix of revenue sources for Yale's schools and units that generated the results from operations.

Yale finished the year with \$26.5 billion of net assets, a decline of 3.1% from the prior year. The decline resulted from two factors. First, the Yale Endowment generated a 3.4% investment return. This performance was better relative to the average for peer universities - another impressive year for the Yale Endowment. Even so, Yale's Endowment spending policy resulted in an allocation of \$1.2 billion of Endowment earnings (4.5% of the Endowment's value) to fund operations during the year. With spending from the Endowment (4.5%) exceeding the investment return for the year (3.4%) the result was a reduction in the Endowment's value in

both real and nominal terms. This is an example of the successful impact of the smoothing component of the Endowment spending policy which seeks to cushion the operating budget from short-term swings – upward or downward – in the value of the Endowment. A description of the Endowment spending policy is included in the footnotes to the annual financial report.

The second factor negatively impacting net assets was the low interest rate environment. This resulted in an increase in certain liabilities on the balance sheet which increase as interest rates decline – and decrease when interest rates rise. The biggest increase in liabilities relates to retirement benefits (pension and retiree health) where the funding gap widened. Another item was interest rate swaps (contracts whereby a party sells fixed interest payments in return for variable rate payments) used to lock in a low effective rate of fixed interest expense for debt used to finance the capital building program.

This past year Yale also added several new assets to its balance sheet, the result of a number of exciting developments in the university’s capital building program. The Benjamin Franklin and Pauli Murray residential colleges progressed considerably and look eager to welcome their inaugural class of Yale College students in the fall of 2017. This year the Beinecke Rare Book & Manuscript Library reopened to the campus, and a renovated and expanded Hendrie Hall will be reopening as part of the new Adams Center for Musical Arts. Finally, three exciting projects have begun to take shape for the future: the Schwarzman Center (a student center that will bring together graduate and undergraduate students from all parts of campus); the Hall of Graduate Studies renovation (which will bring Humanities departments together in a single location); and the new Yale Science Building (which will bring biology, physics, chemistry and other faculty and students closer together). These projects will help forge the more unified Yale described by President Salovey by bringing faculty and students together across Yale’s unique breadth of teaching and research in the arts, humanities, social sciences, and sciences.

I look forward to updating you on these and other exciting developments in the years ahead.



Stephen C. Murphy
Vice President for Finance
and Chief Financial Officer

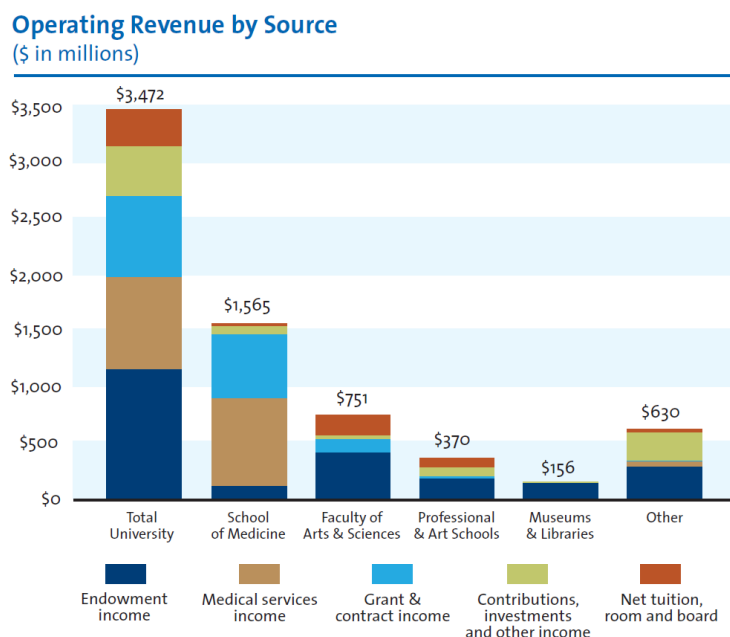
Financial Results

Overview

The University manages its operations to achieve long-term financial equilibrium. It is committed to sustaining both the programs and the capital assets (Endowment and facilities) supporting those programs over multiple generations. Endowment income, Yale’s largest source of revenue, is allocated to the Operating Budget based on a spending policy that preserves the Endowment asset values for future generations, while providing a robust revenue stream for current programs. Similarly, the Operating Budget provides the major portion of the funds needed, through the Capital Replacement Charge (CRC), to replenish the capital base necessary to ensure that buildings are maintained to support current programs.

Fiscal Year 2016 Management View Results

The University Budget structure is managed through 46 separate budget units that are combined into five categories for reporting purposes.



The largest unit is the School of Medicine, representing 45% of University total operating revenue. The School of Medicine engages in research, teaching and clinical practice. Patient care services are provided to the community and the related revenue is based on contracts from managed care companies (63%), Medicare (19%), Medicaid (8%), payments received directly from patients (4%) and commercial insurance and others (6%). The School of Medicine’s Yale Medicine (“YM”) is one of the largest academic multi-specialty practices in the country and the

largest in Connecticut. As of Spring 2016, YM was composed of 1,133 full-time and 277 part-time physicians providing services in over 100 specialty and subspecialty areas organized into 20 departments, engaging in research and participating in teaching approximately 832 total students and 864 residents. The School of Medicine performs significant research for Federal, State and Corporate entities. Research funded by the federal government represents 74% of total research performed at the School of Medicine with the National Institutes of Health (NIH) providing the largest component of that funding at 94%. The University has established policies and procedures to manage and monitor compliance with these important agreements.

The Faculty of Arts and Sciences includes Yale's undergraduate and graduate programs in the arts and sciences. During the 2015-2016 academic year, 5,532 undergraduate students were attending programs at Yale College and 2,858 were pursuing their studies at the Graduate School of Arts and Sciences. Yale College is dedicated to providing undergraduates with a liberal arts education that fosters intellectual curiosity, independent thinking, and leadership abilities. The essence of such an education is not what one studies but the result – gaining the ability to think critically and independently and to write, reason, and communicate clearly – the foundation for all professions. Yale Graduate School of Arts and Sciences considers learning to teach to be an integral part of doctoral education, and builds training and teaching opportunities into every program. Throughout the unique program of study crafted by a graduate student and his or her faculty advisers, the University's goal is to provide support that allows its Ph.D. students to focus on their scholarship, successfully complete their education, and find rewarding careers.

The Professional and Arts Schools category includes the Divinity School, the Law School, the School of Art, the School of Music, the School of Forestry & Environmental Studies, the School of Nursing, the School of Drama, the School of Architecture, and the School of Management. During the 2015-2016 academic year, 3,995 students were pursuing their studies at one of the Professional Schools. Museums and Libraries includes the Peabody Museum of Natural History, the Yale University Art Gallery, Yale Center for British Art and all of the University's libraries. First-hand encounters with Yale's collections are an integral part of teaching and learning across the University and forge creative connections that inspire tomorrow's leaders. The Other category includes Athletics, West Campus and various administrative units.

The University ended the year with an increase to its operating fund balances of \$37 million on a Management View basis. Actual operating revenues increased 5.3% and actual operating expenses, excluding transfers, increased 4.5% compared to 2015. Endowment income growth contributed to strong revenue increase. Grant and contract income for the School of Medicine was significantly higher than prior year partially due to the NIH increased budget. In addition, the clinical practice continues to grow at a rapid pace with increases in medical services income and faculty salaries.

The Consolidated Statement of Activities in the audited financial statements is presented in accordance with U.S. generally accepted accounting principles (GAAP). GAAP recognizes revenue when earned and expenses when incurred. The Management View is focused more on

resources available and used in the fiscal period presented. The Management View does not include certain expenses that are paid out over the long term, such as unfunded defined benefit costs, and certain revenue that will not be received within the next fiscal year, such as pledged contribution revenue. Another significant difference is that the Management View recognizes capital maintenance through a capital replacement charge (CRC) and recognizes equipment purchases as expense in the year acquired versus the historical cost depreciation expensed in the Consolidated Statement of Activities. The GAAP financial statements do not present fund balance transfers between the operating, physical, and financial categories, as the Management View does. The Management View presentation, along with a summary of the differences between the University's net operating results from the Management View to the GAAP View, is presented below.

Yale University Operating Results – Management View

for the years ended June 30, 2016 and June 30, 2015 (\$ in thousands)

| | June 30, 2016 | June 30, 2015 |
|--|------------------|-------------------|
| Revenues: | | |
| Tuition, room and board - gross | \$ 603,894 | \$ 577,724 |
| Tuition discount | (271,315) | (259,472) |
| Tuition, room and board - net | 332,579 | 318,252 |
| Grants and contract income | 719,526 | 673,739 |
| Medical services income | 823,132 | 786,541 |
| Contributions | 162,784 | 155,701 |
| Endowment income | 1,152,750 | 1,082,480 |
| Investment and other income | 281,664 | 280,964 |
| Total external income | 3,472,435 | 3,297,677 |
| Expenses: | | |
| Faculty salaries | 814,857 | 776,291 |
| All other salaries | 782,812 | 751,119 |
| Employee benefits | 513,098 | 473,724 |
| Total salaries and benefits | 2,110,767 | 2,001,134 |
| Stipends and fellowships | 95,491 | 91,328 |
| Non-salary expenses | 803,416 | 757,915 |
| Interest, CRC and other amortization | 357,328 | 371,411 |
| Total expenses | 3,367,002 | 3,221,788 |
| Transfers | (68,111) | (58,574) |
| TOTAL NET OPERATING RESULTS (MANAGEMENT VIEW) | 37,322 | 17,315 |
| Summary of differences between the Management View and GAAP presentation of net operating results: | | |
| Operating pledge activity | 17,981 | 107,273 |
| Expenses related to long-term liabilities (Depreciation in excess of capital funding) / | (59,080) | (55,783) |
| Capital funding in excess of depreciation | (28,214) | 9,622 |
| Interest rate and energy hedge realized loss | 54,857 | 53,573 |
| Deferred investment income | (5,210) | 3,773 |
| Funding transfers | 68,111 | 58,574 |
| INCREASE IN NET ASSETS FROM OPERATIONS PER THE CONSOLIDATED STATEMENT OF ACTIVITIES (GAAP VIEW) | \$ 85,767 | \$ 194,347 |

Fiscal Year 2016 GAAP Results

Operating Revenue

The University derives its operating revenue from the following sources: tuition, room and board (net of certain scholarships and fellowships), grants and contracts, medical services, endowment income, contributions, investment and other income.

Net Tuition, Room and Board

Net tuition, room and board increased 2.4% from \$315.8 million in 2015 to \$323.3 million in 2016. Tuition, room and board totaled \$603.9 million in 2016, an increase of 4.5% from 2015. Of this amount, \$524.8 million represents tuition, a 4.9% increase over 2015 due primarily to the increased enrollment in the School of Management and the School of Medicine and \$79.1 million represents revenue from room and board which increased 1.9% from 2015. In accordance with generally accepted accounting principles, student income is presented net of certain scholarships and fellowships, which totaled \$280.6 million and \$262.0 million for 2016 and 2015, respectively. Net tuition, room and board represented 9.4% and 9.3% of the University's operating revenues in 2016 and 2015, respectively.

Tuition for students enrolled in Yale College was \$47,600 and room and board was \$14,600, bringing the total term bill to \$62,200 for the 2015-2016 academic year. The increase in the Yale College term bill was 4.0% over the 2014-2015 academic year.

The University maintains a policy of offering Yale College admission to qualified applicants without regard to family financial circumstances. This "need-blind" admission policy is supported with a commitment to meet in full the demonstrated financial need of all students throughout their undergraduate years.

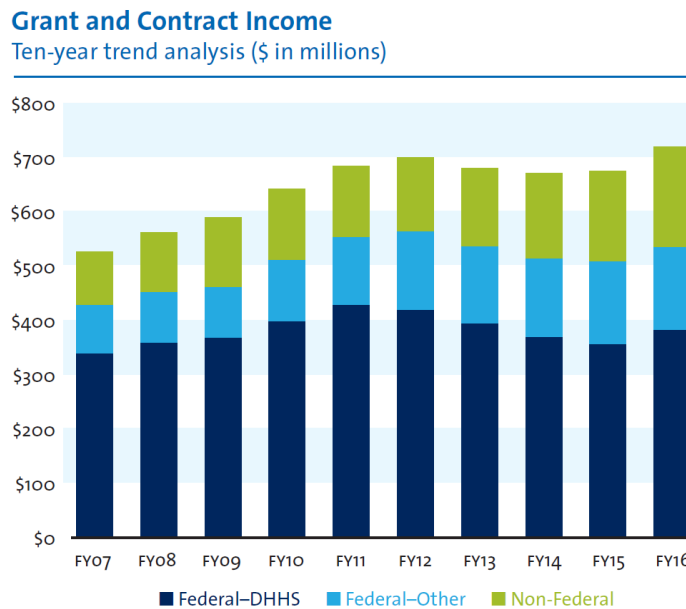
During the 2015-16 academic year, 50% of Yale College undergraduates received financial aid. In the Graduate School of Arts and Sciences, 97% received financial aid in the form of tuition discounts, stipends and health insurance. In the professional schools, 79% received financial aid. In all, 70% of total University eligible enrollment received some form of University-administered student aid in the form of loans, scholarships, or a combination of both loans and scholarships.

Grant and Contract Income

Grant and contract income represents 20.9% of total operating revenues. This revenue category experienced a 6.8% increase from \$673.7 million in 2015 to \$719.5 million in 2016. The Yale School of Medicine, which received 80% of the University's grant and contract income in fiscal year 2016, reported an increase of 9.5% for 2016, while the remaining University units decreased by 2.9%.

The federal government funded \$533.7 million, or 74.2% of 2016 grant and contract income, in support of Yale’s research and training programs. Included in the \$533.7 million is the Department of Health and Human Services (DHHS) funding of \$381.8 million, an increase of 7.5% compared to the prior year. The University also receives significant research funding from the National Science Foundation, the Department of Energy, the Department of Defense, and student aid awards from the Department of Education. Non-federal sources, which include foundations, voluntary health agencies, corporations, and the State of Connecticut, provided an additional \$185.8 million in funding for research, training, clinical, and other sponsored agreements during 2016.

In addition to the reimbursement of direct costs charged to sponsored awards, sponsoring agencies reimburse the University for a portion of its facilities and administrative costs (referred to as indirect costs), which include costs related to research laboratory space, facilities, and utilities, as well as administrative and support costs incurred for sponsored activities. These reimbursements for facility and administrative costs amounted to \$176.6 million in 2016. Recovery of facility and administrative costs associated with federally sponsored awards is recorded at rates negotiated with the University’s cognizant agency, the Department of Health and Human Services.



Medical Services Income

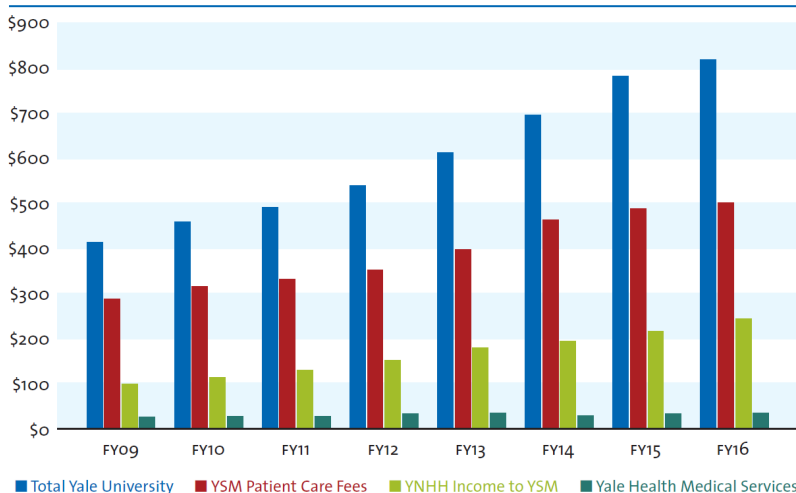
Medical services income totaled \$823.1 million in fiscal year 2016, an increase of 4.7% from 2015, and represented 23.9% of the University’s operating revenue. The largest portion of this revenue stream, \$778.2 million, is derived from medical services provided by the School of Medicine’s YM, one of the largest academic multi-specialty practices in the country and the largest in Connecticut.

Medical services income generated by YM increased by \$40.6 million over 2015, or 5.5%. The volume of clinical activity increased 7.4% over 2015 due to new faculty hires and improved physician productivity. Increased volume was offset by a deterioration in the payor mix.

The strong partnership with Yale New Haven Health System (System) continued in fiscal year 2016 with System support for physician recruitment and program development increasing by 12%, to a total of \$244.8 million.

Medical Services Income

Eight-year trend analysis (\$ in millions)



Contributions

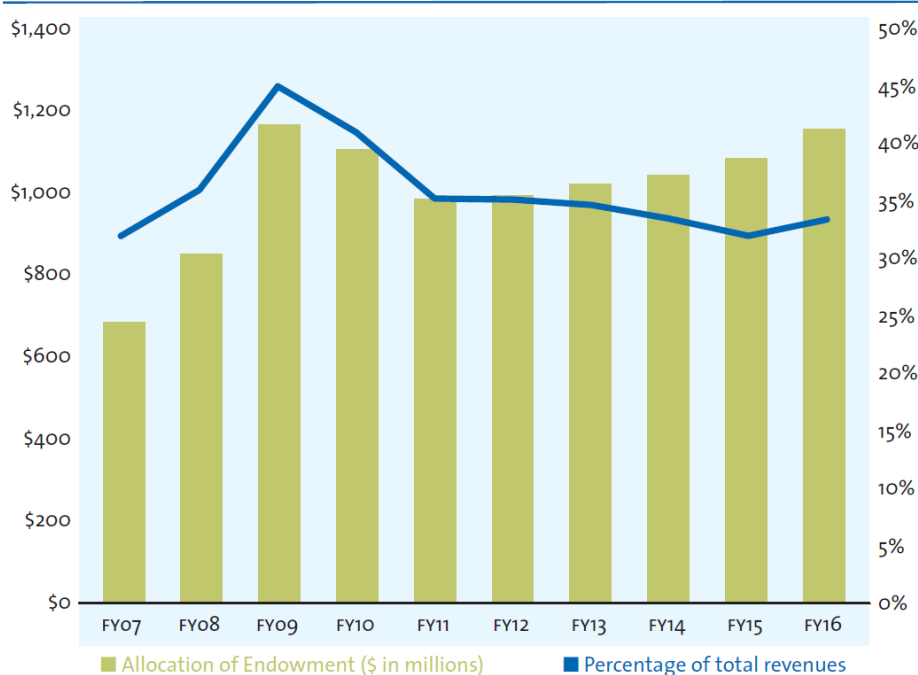
Donations from individuals, corporations and foundations represent a vitally important source of revenue for the University. Gifts to the University provide necessary funding for current operations, for long-term investments in the University's physical infrastructure and, in the case of gifts to the Endowment, provide permanent resources for core activities for future generations. Gifts of \$180.8 million in 2016 and \$263.0 million in 2015, made by donors to support the operations of the University, are reflected as contribution revenue in the operating section of the Consolidated Statement of Activities whereas gifts to the University's Endowment and for building construction and renovation are reflected as contribution revenue in the non-operating section. In aggregate, contributions included in the University consolidated financial statements total \$435.2 million in 2016 compared to \$401.5 million in 2015.

Certain gifts commonly reported in fund-raising results are not recognized as contributions in the University consolidated financial statements. For example, “in-kind” gifts such as works of art and books are not recognized as financial transactions in the University consolidated financial statements. Grants from private, non-governmental sources (i.e., corporations and foundations) reported as gifts for fund-raising purposes are included in the Consolidated Statement of Activities as grant and contract income.

Allocation of Endowment Spending

Each year a portion of accumulated Endowment investment returns is allocated to support operational activity. This important source of revenue represents 33.4% of total operating revenue this year, and it remains the largest source of operating revenue for the University. The level of spending is computed in accordance with an Endowment spending policy that has the effect of smoothing year-to-year market swings. Endowment investment returns allocated to operating activities increased by 6.5% in 2016 to \$1,153.4 million. Additional information on the Endowment spending policy is provided in the Endowment section of this report and in the footnotes to the consolidated financial statements.

Allocation of Endowment Spending
as a percentage of total revenues, ten-year trend analysis



Other Investment Income

Other investment income includes interest, dividends, and gains on non-Endowment investments.

Other Income

Other income primarily includes publications income, royalty income, admissions revenue relating to athletic events and drama productions, parking revenue, special event and seminar fees, application and enrollment fees.

Operating Expenses

Operating expenses totaled \$3.4 billion for 2016, representing a 5.5% increase for the year. With 4,420 faculty, 1,143 postdoctoral associates, 4,252 managerial and professional staff, and 5,203 unionized clerical, technical, service, and maintenance personnel, personnel costs are the single largest component (63%) of the University's total operating expenses. (Counts represent headcount as of fall 2015.)

Personnel costs were \$2,121.9 million in 2016, a 5.2% increase over 2015. Faculty salary expenses increased 5.0% which includes growth in clinical activities. Staff salaries and wages increased 4.3% from 2015 to 2016.

The cost of providing employee benefits, including various pension, post-retirement health, and insurance plans in addition to Social Security and other statutory benefits, totaled \$545.0 million for 2016, an increase of 6.8% from 2015. The largest drivers of this increase are the costs for defined benefit plans and the cost of medical benefits.

Depreciation, amortization and interest expenses decreased 4.1%. Favorable debt refinancing resulted in lower interest costs.

Other operating expenses, including services, materials and supplies, and other expenses increased 10.5% from 2015, primarily as a result of increased grant-funded and clinical activities in the School of Medicine and increased collections activities at the Beinecke Rare Book & Manuscript Library.

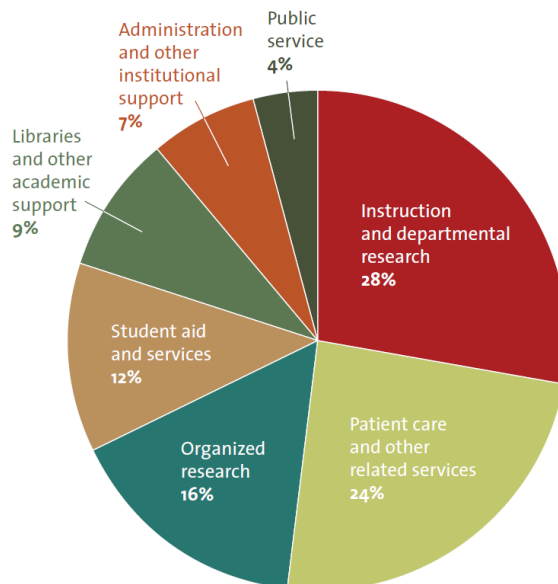
Yale reports its operating expenses by natural classification in the Consolidated Statement of Activities and discloses its operating expenses by functional classification in the Notes to Consolidated Financial Statements in accordance with generally accepted accounting principles.

Operating Expenses by Natural Classification



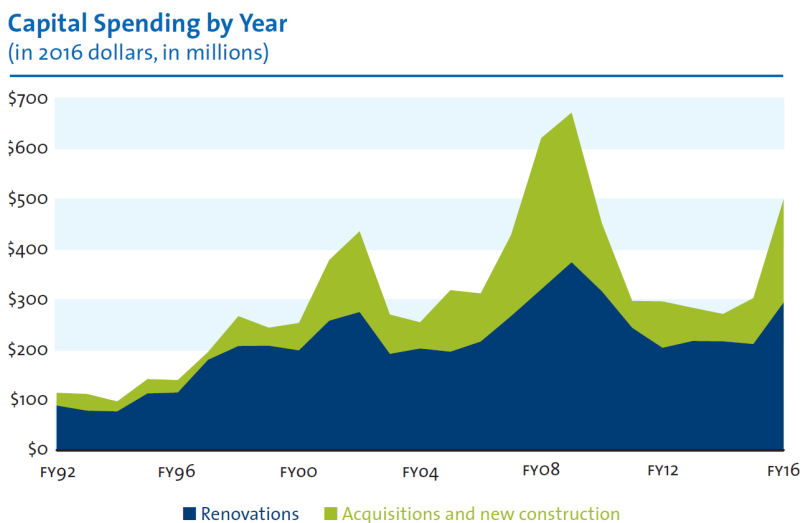
According to functional classification, the University spent 49.1% of its operating resources on academic activities including instruction and departmental research, libraries and other academic support and student aid and services. Organized research represented 15.7% and patient care 23.6% of spending. Organized research and patient care activities are integral to the academic and learning experiences at the University.

Operating Expenses by Functional Classification



Physical Capital

Capital spending on facilities in fiscal year 2016 totaled \$498.1 million. This represents an increase in spending level of 64.9% compared to 2015.

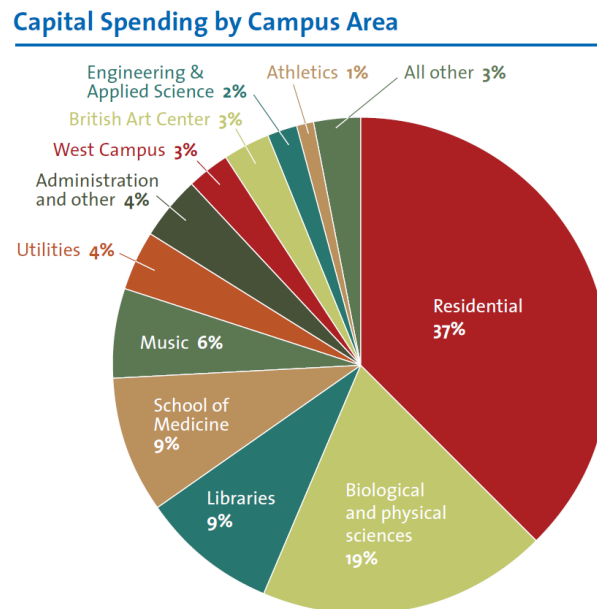


The largest share of the University's capital spending, 38%, was used to continue work previously under way to expand its undergraduate residences. In 2016, construction continued on the two new residential colleges, Pauli Murray and Benjamin Franklin colleges. The facilities sited on the parcel bounded by Sachem, Prospect and Lock streets, will model the twelve existing residential colleges, with a head of college, dean, fellows, and students forming a close-knit community, supported by public and private spaces for living and study. Construction began in November of 2014 and will be completed prior to the beginning of the 2017-2018 academic year.

The University allocated 19% of its capital spending to the biological and physical sciences with the continued renovation of the Sterling Chemistry Laboratory that will provide teaching and research space. Begun in 2015, the renovation that includes ten chemistry and ten biology teaching labs and associated support spaces, was completed for classes in the fall of 2016. Spending was also incurred to complete the programmatic renovation of Wright Laboratory to create a state-of-the-art space for physics research.

The comprehensive renovation of the Beinecke Rare Book & Manuscript Library which was completed in early September 2016, included upgrades to mechanical, electrical, plumbing and fire code systems, along with renovations to support programmatic use changes of existing study and conference areas. These refurbishments fully replaced all the building's mechanical systems and also provided expanded teaching spaces and greater access to the library's world-renowned collections.

The University's renovation and building plans were funded by a combination of gifts, debt and funds from the operating budget. The University continues to rely heavily on the extraordinary generosity of its alumni and friends. During fiscal year 2016, the University recognized \$71.9 million of contributions for the support of renovation and construction. The University has been the beneficiary of an outstanding response from donors on the construction of the new residential colleges, the renovation of the Adam Center (Hendrie Hall), and the Schwartzman Center renovation.



A major source of funding for the capital program is debt provided through the Connecticut Health and Educational Facilities Authority (CHEFA) which allows the University to borrow at tax-exempt rates. This funding source is critical to keeping the cost of funding at lower levels which allows the University to maximize the use of its resources in the fulfillment of its mission of teaching and research. The University continues to draw bond proceeds for the \$250 million (Series 2014A) issued in Fiscal Year 2015 through CHEFA to finance planned renovation and capital additions. The University continues to receive the highest bond ratings available: AAA from Standard and Poor's and Aaa from Moody's.

Recognizing the critical importance of maintaining its physical capital over many generations, the University allocates funds directly from the operating budget to a capital maintenance account. The annual equilibrium funding target for internal purposes is an estimate that is reserved from annual operating funding sources to maintain Yale's facilities in good condition on a consistent basis, thus avoiding deferred maintenance. While not an exact science, an estimate of the full capital replacement equilibrium level for 2016 is \$207.1 million. In 2016, the large majority of this amount was funded with operating funds.

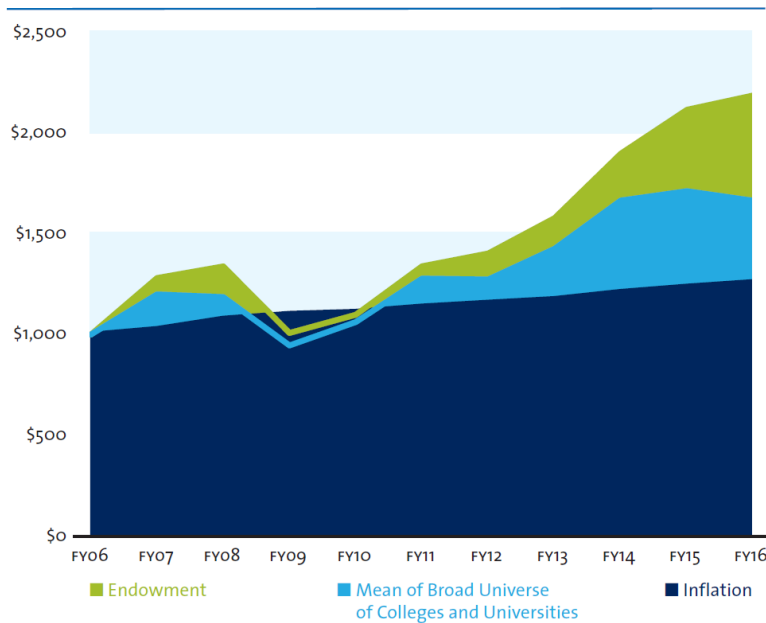
Endowment

The Endowment provides the largest source of support for the academic programs of the University. To balance current and future needs, Yale employs investment and spending policies designed to preserve Endowment asset values while providing a substantial flow of income to the Operating Budget. At June 30, 2016, net assets in the Endowment totaled approximately \$25.4 billion, after the allocation of Endowment spending of \$1.2 billion to the Operating Budget during the year.

Investment Performance

For the fiscal year ending June 30, 2016, the Endowment earned a 3.4% investment return. During the past decade, the Endowment earned an annualized 8.1% return, which added \$6.0 billion of value relative to a composite passive benchmark and \$7.0 billion relative to the mean return of a broad universe of colleges and universities.

Growth of \$1,000 Invested in the Yale Endowment
2006–2016



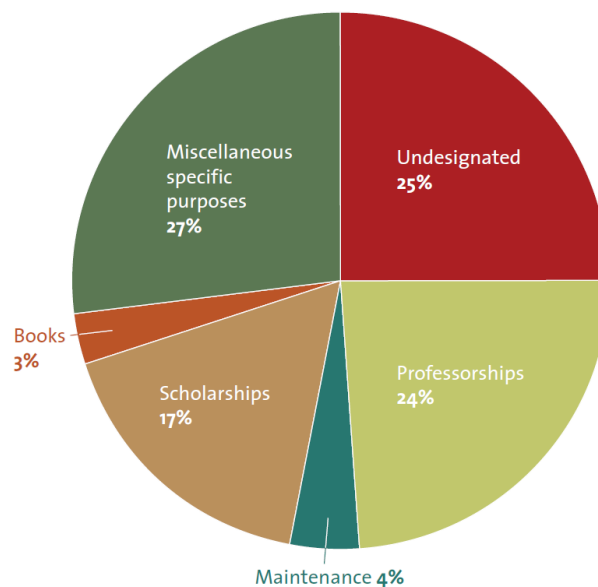
Endowment Spending

The Endowment spending policy, which allocates Endowment earnings to operations, balances the competing objectives of providing a stable flow of income to the Operating Budget and protecting the real value of the Endowment over time. The spending policy manages the trade-off between these two objectives by using a long-term target spending rate combined with a smoothing rule, which adjusts spending in any given year gradually in response to changes in Endowment market value.

The target spending rate approved by the Yale Corporation currently stands at 5.25%. According to the smoothing rule, Endowment spending in a given year sums to 80% of the previous year's spending and 20% of the targeted long-term spending rate applied to the fiscal year-end market value two years prior. The spending amount determined by the formula is adjusted for inflation and constrained so that the calculated rate is at least 4.0% and not more than 6.5% of the Endowment's market value. The smoothing rule and the diversified nature of the Endowment mitigate the impact of short-term market volatility on the flow of funds to support Yale's operations.

The majority of Endowment spending is allocated across multiple purposes, including financial aid and professorships, based on donor restrictions or internal designations by the university. Endowment spending that is neither restricted nor designated provides additional support for budgetary priorities, such as financial aid and professorships, as well as for other purposes to carry out the university's mission.

Endowment Spending Allocation



Asset Allocation

Asset allocation proves critical to successful Endowment performance. Yale's asset allocation policy combines tested theory and informed market judgment to balance investment risks with the desire for high returns.

Both the need to provide resources for current operations and the desire to preserve the purchasing power of assets dictate investing for high returns, which leads the Endowment to be weighted toward equity. In addition, the Endowment's vulnerability to inflation directs the University away from fixed income and toward equity instruments. Hence, over 90% of the Endowment is invested in assets expected to produce equity-like returns, through domestic and international securities, real assets, and private equity.

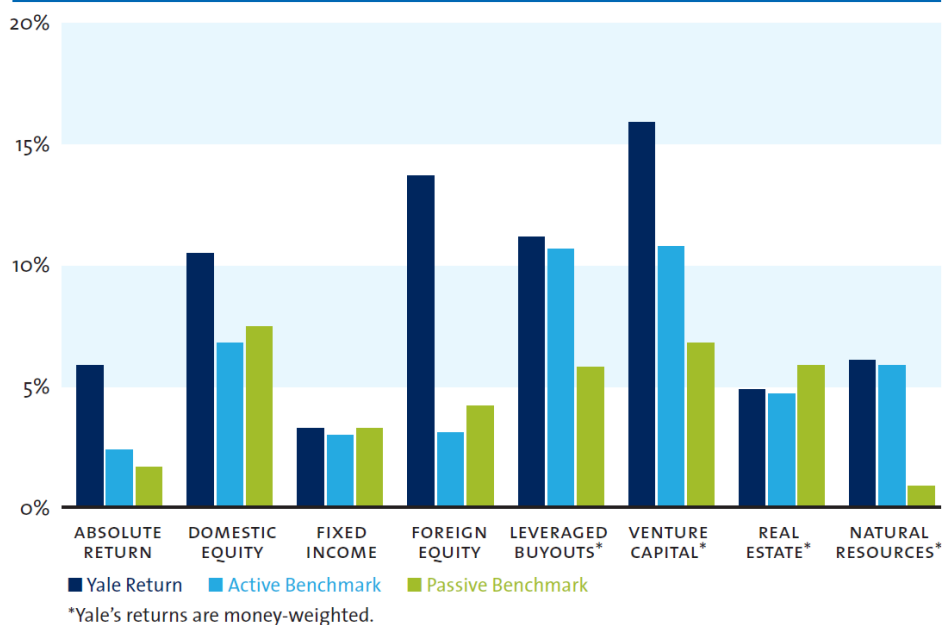
Over the past thirty years, Yale significantly reduced the Endowment's exposure to traditional domestic marketable securities, reallocating assets to nontraditional asset classes. In 1986, more than 80% of the Endowment was committed to U.S. stocks, bonds, and cash. Today, domestic marketable securities account for approximately one-ninth of the portfolio, and private equity, absolute return strategies, real assets, and foreign equity represent around eight-ninths of the Endowment.

The heavy allocation to nontraditional asset classes stems from the diversifying power they provide to the portfolio as a whole. Alternative assets, by their nature, tend to be less efficiently priced than traditional marketable securities, providing an opportunity to exploit market inefficiencies through active management. Today's portfolio has significantly higher expected returns and lower volatility than the 1986 portfolio.

| Asset Class | June 30, 2016 | Current Target |
|-------------------|---------------|----------------|
| Absolute Return | 22.1% | 22.5% |
| Venture Capital | 16.2% | 16.0% |
| Foreign Equity | 14.9% | 15.0% |
| Leveraged Buyouts | 14.7% | 15.0% |
| Real Estate | 13.0% | 12.5% |
| Bonds and Cash | 7.2% | 7.5% |
| Natural Resources | 7.9% | 7.5% |
| Domestic Equity | 4.0% | 4.0% |
| Total | 100.0% | 100.0% |

Yale Endowment

Annualized Returns vs. Benchmarks by Asset Class
Net of Fees, Ten Years Ended June 30, 2016



Active Benchmarks

Absolute Return: Credit Suisse Composite

Domestic Equity: BNY Median Manager, U.S. Equity

Fixed Income: BNY Median Manager, Fixed Income

Foreign Equity: BNY Median Manager Composite, Foreign Equity

Leveraged Buyouts: Cambridge Associates Leveraged Buyouts Composite

Venture Capital: Cambridge Associates Global Venture Capital

Real Estate: Cambridge Associates Real Estate

Natural Resources: Cambridge Associates Natural Resources

Passive Benchmarks

Absolute Return: Barclays 9-12 Mo Treasury

Domestic Equity: Wilshire 5000

Fixed Income: LB Treasury Index through June 2008, Barclays 1-5 Year Treasury from July 2008 to September 2014, Barclays 1-3 Year Treasury after September 2014

Foreign Equity: MSCI EAFE Investable Market Index / MSCI Emerging Markets Investable Market Index + MSCI China A-Share Investable Market Index, weighted according to target developed and emerging equity allocations

Leveraged Buyouts: Russell 2000 (75%) / MSCI ACWI ex-US Small-Cap Index (25%)

Venture Capital: Russell 2000 Technology (100%) through June 2010. Russell 2000 Technology (75%) / MSCI China Small Cap (17%) / MSCI India Small Cap (8%) thereafter

Real Estate: MSCI US REIT Index

Natural Resources: Custom Timber REIT basket / S&P OG Exploration & Production Index / Euromoney Global Mining Index, weighted according to target timber, oil and gas, and mining allocations, respectively

Endowment Summary

Yale continues to rely on the principles of equity orientation and diversification. These principles guide Yale's investment strategy, as equity orientation makes sense for investors with long time horizons and diversification allows the construction of portfolios with superior risk and return characteristics. The University's equity-oriented, well-diversified portfolio positions the Endowment for long-term investment success.

Management's Responsibility for Financial Statements

Management of the university is responsible for the integrity and reliability of the consolidated financial statements. Management represents that, with respect to the university's financial information, the consolidated financial statements in this annual report have been prepared in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP").

The accompanying consolidated financial statements have been audited by the university's independent auditors, PricewaterhouseCoopers LLP. Their audit opinion, on the following page, expresses an informed judgment as to whether the consolidated financial statements, considered in their entirety, present fairly, in conformity with U.S. GAAP, the consolidated financial position and changes in net assets and cash flows.

The university maintains a system of internal controls over financial reporting, which is designed to provide a reasonable assurance to the university's management and the Yale Corporation ("the Corporation") regarding the preparation of reliable published financial statements. Such controls are maintained by the establishment and communication of accounting and financial policies and procedures, by the selection and training of qualified personnel, and by an internal audit program designed to identify internal control weaknesses in order to permit management to take appropriate corrective action on a timely basis. There are, however, inherent limitations in the effectiveness of any system of internal control, including the possibility of human error and the circumvention of controls. Accordingly, even an effective internal control system can provide only reasonable assurance with respect to financial statement preparation. Furthermore, the effectiveness of the internal control system can change with circumstances.

The Corporation, through its Audit Committee comprised of members not employed by the university, are responsible for engaging the independent auditors and meeting with management, internal auditors and the independent auditors to independently assess whether each is carrying out its responsibilities. Both the internal auditors and the independent auditors have full and free access to the Audit Committee.



Stephen C. Murphy
Vice President for Finance and
Chief Financial Officer



Lucy A. Lucker
University Controller and
Chief Accounting Officer



Report of Independent Auditors

To the President and Fellows of Yale University:

We have audited the accompanying consolidated financial statements of Yale University (the "University"), which comprise the consolidated statement of financial position as of June 30, 2016 and 2015, and the related consolidated statements of activities for the year ended June 30, 2016 and of cash flows for the years ended June 30, 2016 and 2015.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the University's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the University as of June 30, 2016 and 2015, and the changes in its net assets for the year ended June 30, 2016 and its cash flows for the years ended June 30, 2016 and 2015 in accordance with accounting principles generally accepted in the United States of America.

Other Matters

We previously audited the consolidated statement of financial position as of June 30, 2015, and the related consolidated statements of activities and cash flows for the year then ended (not presented herein), and in our report dated October 21, 2015, we expressed an unmodified audit opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying summarized financial information as of June 30, 2015 and for the year then ended is consistent, in all material respects, with the audited consolidated statements from which it has been derived.

PricewaterhouseCoopers LLP

October 21, 2016

Yale University Consolidated Statement of Financial Position

as of June 30, 2016 and 2015 (\$ in thousands)

| | 2016 | 2015 |
|--|----------------------|----------------------|
| Assets: | | |
| Cash and cash equivalents | \$ 190,728 | \$ 288,077 |
| Accounts receivable, net | 223,860 | 199,382 |
| Contributions receivable, net | 567,946 | 508,615 |
| Notes receivable | 127,078 | 131,413 |
| Investments, at fair value | 30,910,832 | 31,192,504 |
| Other assets | 157,391 | 141,408 |
| Land, buildings and equipment, net of accumulated depreciation | 4,779,419 | 4,510,303 |
| Total assets | \$ 36,957,254 | \$ 36,971,702 |
| Liabilities: | | |
| Accounts payable and accrued liabilities | \$ 404,797 | \$ 359,901 |
| Advances under grants and contracts and other deposits | 123,351 | 101,932 |
| Other liabilities | 1,631,524 | 1,160,876 |
| Liabilities under split-interest agreements | 129,252 | 114,606 |
| Bonds and notes payable | 3,533,672 | 3,557,822 |
| Liabilities associated with investments | 4,565,218 | 4,259,954 |
| Advances from Federal government for student loans | 31,008 | 31,438 |
| Total liabilities | \$ 10,418,822 | \$ 9,586,529 |
| Net Assets: | | |
| Unrestricted | \$ 3,677,192 | \$ 4,516,460 |
| Temporarily restricted | 18,856,357 | 19,094,981 |
| Permanently restricted | 3,664,811 | 3,486,158 |
| Net assets: Yale University | 26,198,360 | 27,097,599 |
| Net assets: non-controlling interests | 340,072 | 287,574 |
| Total net assets | \$ 26,538,432 | \$ 27,385,173 |
| Total liabilities and net assets | \$ 36,957,254 | \$ 36,971,702 |

The accompanying notes are an integral part of these consolidated financial statements.

Yale University Consolidated Statement of Activities

for the year ended June 30, 2016 with comparative totals for the year ended June 30, 2015 (\$ in thousands)

| | Unrestricted | Temporarily Restricted | Permanently Restricted | 2016 | 2015 |
|---|---------------------|---------------------------|---------------------------|----------------------|----------------------|
| Operating | | | | | |
| <i>Revenues and reclassifications:</i> | | | | | |
| Net tuition, room and board | \$ 323,253 | \$ - | \$ - | \$ 323,253 | \$ 315,772 |
| Grant and contract income, primarily for research and training | 719,525 | - | - | 719,525 | 673,731 |
| Medical services income | 823,132 | - | - | 823,132 | 786,541 |
| Contributions | 28,650 | 152,146 | - | 180,796 | 263,019 |
| Allocation of endowment spending from financial capital | 350,108 | 803,258 | - | 1,153,366 | 1,082,476 |
| Other investment income | 57,873 | 8,577 | - | 66,450 | 77,219 |
| Other income | 183,451 | - | - | 183,451 | 183,197 |
| Total revenues | 2,485,992 | 963,981 | - | 3,449,973 | 3,381,955 |
| Net assets released from restrictions | 934,218 | (934,218) | - | - | - |
| Total revenues and reclassifications | 3,420,210 | 29,763 | - | 3,449,973 | 3,381,955 |
| <i>Expenses:</i> | | | | | |
| Salaries and wages | 1,576,953 | - | - | 1,576,953 | 1,507,110 |
| Employee benefits | 544,960 | - | - | 544,960 | 510,307 |
| Depreciation, amortization and interest | 331,140 | - | - | 331,140 | 345,267 |
| Other operating expenditures | 911,153 | - | - | 911,153 | 824,924 |
| Total expenses | 3,364,206 | - | - | 3,364,206 | 3,187,608 |
| Increase in net assets from operating activities | 56,004 | 29,763 | - | 85,767 | 194,347 |
| Non-operating | | | | | |
| Contributions | 1,750 | 98,317 | 154,313 | 254,380 | 138,521 |
| Total endowment return | 124,284 | 626,792 | 2,154 | 753,230 | 2,579,415 |
| Allocation of endowment spending to operations | (190,087) | (966,204) | 2,925 | (1,153,366) | (1,082,476) |
| Other investment (loss) | (434,825) | (277) | - | (435,102) | (119,759) |
| Change in funding status of defined benefit plans | (393,574) | - | - | (393,574) | (119,262) |
| Other (decreases) increases | (26,167) | (3,668) | 19,261 | (10,574) | (4,720) |
| Net assets released from restrictions | 23,347 | (23,347) | - | - | - |
| (Decrease) increase in non-operating activities | (895,272) | (268,387) | 178,653 | (985,006) | 1,391,719 |
| Total (decrease) increase in net assets - Yale University | (839,268) | (238,624) | 178,653 | (899,239) | 1,586,066 |
| Change in non-controlling interests | 52,498 | - | - | 52,498 | (1,726) |
| Total (decrease) increase in net assets | (786,770) | (238,624) | 178,653 | (846,741) | 1,584,340 |
| Net assets, beginning of year | 4,804,034 | 19,094,981 | 3,486,158 | 27,385,173 | 25,800,833 |
| Net assets, end of year | \$ 4,017,264 | \$ 18,856,357 | \$ 3,664,811 | \$ 26,538,432 | \$ 27,385,173 |

The accompanying notes are an integral part of these consolidated financial statements.

Yale University Consolidated Statement of Cash Flows

for the years ended June 30, 2016 and 2015 (\$ in thousands)

| | 2016 | 2015 |
|---|-------------------|-------------------|
| Operating activities: | | |
| Change in net assets | \$ (846,741) | \$ 1,584,340 |
| Adjustments to reconcile change in net assets to net cash used in operating activities: | | |
| Depreciation and amortization | 260,746 | 263,590 |
| Unrealized loss on other investments | 420,667 | 74,129 |
| Net endowment investment gain | (210,958) | (2,256,615) |
| Change in non-controlling interests | (52,498) | 1,726 |
| Non-operating contributions | (254,380) | (138,521) |
| Contributed securities | (101,424) | (54,112) |
| Proceeds from sale of donated securities | 15,381 | 11,255 |
| Other adjustments | 32,116 | (2,891) |
| Changes in assets and liabilities that provide (use) cash: | | |
| Accounts receivable | (24,478) | (25,723) |
| Contributions receivable | (17,949) | (108,092) |
| Other operating assets | 6,717 | 5,340 |
| Accounts payable and accrued expenses | (3,082) | 1,288 |
| Advances under grants and contracts and other deposits | 21,419 | 9,044 |
| Other liabilities | 470,648 | 205,172 |
| Net cash used in operating activities | (283,816) | (430,070) |
| Investing activities: | | |
| Student loans repaid | 17,462 | 15,549 |
| Student loans granted | (12,479) | (16,467) |
| Purchases related to capitalized software costs and other assets | (14,239) | (24,576) |
| Proceeds from sales and maturities of investments | 8,790,974 | 11,838,554 |
| Purchases of investments | (8,361,249) | (11,455,465) |
| Purchases of land, buildings and equipment | (532,845) | (331,172) |
| Net cash (used in) provided by investing activities | (112,376) | 26,423 |
| Financing activities: | | |
| Proceeds from restricted contributions | 212,998 | 172,337 |
| Proceeds from sale of contributed securities restricted for endowment | 86,043 | 42,857 |
| Contributions received for split-interest agreements | 23,842 | 10,373 |
| Payments made under split-interest agreements | (16,453) | (13,126) |
| Proceeds from long-term debt | 300,000 | 250,000 |
| Repayments of long-term debt | (308,276) | (6,325) |
| Interest earned and advances from Federal government for student loans | 689 | 693 |
| Net cash provided by financing activities | 298,843 | 456,809 |
| Net (decrease) increase in cash and cash equivalents | (97,349) | 53,162 |
| Cash and cash equivalents, beginning of year | 288,077 | 234,915 |
| Cash and cash equivalents, end of year | \$ 190,728 | \$ 288,077 |

The accompanying notes are an integral part of these consolidated financial statements.

Yale University

Notes to Consolidated Financial Statements

1. Significant Accounting Policies

a. General

Yale University ("the University") is a private, not-for-profit institution of higher education located in New Haven, Connecticut. The University is governed by the Yale Corporation (the "Corporation"), a body of nineteen Trustees consisting of the President, ten Successor Trustees who are Successors to the original Trustees, six Alumni Fellows, and the Governor and Lieutenant Governor of Connecticut, ex officio.

The University provides educational services primarily to students and trainees at the undergraduate, graduate and postdoctoral levels, and performs research, training and other services under grants, contracts and other similar agreements with agencies of the Federal government and other sponsoring organizations. The University's academic organization includes Yale College, the Graduate School of Arts and Sciences, twelve professional schools and a variety of research institutions and museums. The largest professional school is the Yale School of Medicine, which conducts medical services in support of its teaching and research missions.

The University has been granted tax exempt status under section 501(c)(3) of the Internal Revenue Code.

b. Basis of Presentation

The consolidated financial statements of the University include the accounts of all academic and administrative departments of the University, and affiliated organizations that are controlled by the University.

Financial statements of private, not-for-profit organizations measure aggregate net assets and net asset activity based on the absence or existence of donor-imposed restrictions. Net assets are reported as unrestricted, temporarily restricted and permanently restricted and serve as the foundation of the accompanying consolidated financial statements. Brief definitions of the three net asset classes are presented below:

Unrestricted Net Assets - Net assets derived from tuition and other institutional resources that are not subject to explicit donor-imposed restrictions. Unrestricted net assets also include gains on board designated funds functioning as endowment.

Temporarily Restricted Net Assets - Net assets subject to explicit donor-imposed restrictions on the expenditure of contributions or income and gains on contributed assets and net assets from endowments not yet appropriated for spending by the governing board. When temporary

restrictions expire due to the passage of time or the incurrence of expenditures that fulfill the donor-imposed restrictions, temporarily restricted net assets are reclassified to unrestricted net assets. Temporarily restricted net assets are established with restricted contributions from donors and restricted income generated from endowments. In addition, temporarily restricted net assets include restricted contributions from donors classified as funds functioning as endowment. Restrictions include support of specific schools or departments of the University, for professorships, research, faculty support, scholarships and fellowships, library and art museums, building construction and other purposes.

Permanently Restricted Net Assets - Permanently restricted net assets include donor restricted endowments and student loan funds.

The University records as permanently restricted net assets the original amount of gifts which donors have given to be maintained in perpetuity (“donor restricted endowment funds”). For financial reporting purposes, all subsequent accumulated gains on such donor restricted endowment funds that are not classified as permanently restricted net assets are recorded as temporarily restricted net assets until appropriated for expenditure by the Corporation through the application of the endowment spending policy. The Corporation understands its policies on retaining and spending from endowment to be consistent with the requirements of Connecticut law.

Measure of Operations - The University's measure of operations as presented in the consolidated statement of activities includes revenue from tuition (net of certain scholarships and fellowships) and fees, grants and contracts, medical services, contributions for operating programs, the allocation of endowment spending for operations and other revenues. Operating expenses are reported on the consolidated statement of activities by natural classification.

The University's non-operating activity within the consolidated statement of activities includes contributions, investment returns and other activities related to endowment, long term benefit plan obligation funding changes, student loan net assets and contributions related to land, buildings and equipment that are not part of the University's operating activities.

c. Cash and Cash Equivalents

Cash and cash equivalents are recorded at cost which approximates fair value and include institutional money market funds and similar temporary investments with maturities of three months or less at the time of purchase. Cash and cash equivalents awaiting investment in the long term investment pool are reported as investments and totaled \$484.6 million and \$412.8 million at June 30, 2016 and 2015, respectively. Cash and cash equivalents do not include cash balances held as collateral.

Supplemental disclosures of cash flow information include the following, in thousands of dollars:

| | 2016 | 2015 |
|---|-----------|-----------|
| Cash paid during the year for: | | |
| Interest | \$129,912 | \$143,313 |
| Noncash investing activities: | | |
| Land, buildings and equipment purchases payable to vendor | \$ 12,509 | \$ 9,760 |

d. Investments

Fair Value - The University's investments are recorded in the consolidated financial statements at fair value.

Fair value is a market-based measurement based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering assumptions, a three-tier fair value hierarchy has been established which prioritizes the inputs used in measuring fair value. The hierarchy of inputs used to measure fair value and the primary methodologies used by the University to measure fair value include:

- *Level 1* - Quoted prices for identical assets and liabilities in active markets. Market price data is generally obtained from relevant exchange or dealer markets.
- *Level 2* - Inputs, other than the quoted prices in active markets, that are observable either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable.
- *Level 3* - Unobservable inputs in which there is little or no market data, requiring the University to develop its own assumptions.

Assets and liabilities measured at fair value are determined based on the following valuation techniques:

- *Market approach* - Prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities; and
- *Income approach* - Techniques to convert future amounts to a single present amount based on market expectations (including present value techniques and option-pricing models).

The fair value of publicly traded fixed income and equity securities is based upon quoted market prices and exchange rates, if applicable. The fair value of direct real estate investments is determined from periodic valuations prepared by independent appraisers.

Investments are exposed to various risks, such as interest rate, market and credit risks. Due to the level of risk associated with certain investments, it is at least reasonably possible that changes in the values of investments will occur in the near term and that such changes could materially affect the amounts reported in the University's financial statements.

Derivatives - Derivative financial instruments in the investment portfolio include interest rate swaps, equity swaps, credit default swaps, commodity swap contracts and currency forward contracts which are recorded at fair value with the resulting gain or loss recognized in the consolidated statement of activities.

Resell and Repurchase Agreements - Cash paid in connection with resell agreements are generally collateralized by federal agency and foreign debt securities. The University takes possession of the underlying collateral and monitors the value of the underlying collateral to the amount due under the agreement. Cash received under repurchase agreements are collateralized by investments in asset backed, corporate debt, federal agency and foreign debt securities. Collateral market value is monitored to the amounts due under the agreements.

Management Fees - The University records the cost of managing its endowment portfolio as a decrease in non-operating activity within the applicable net asset class in the consolidated statement of activities. Management fees consist of the internal costs of the Investments Office, outside custodian fees and fees for external investment managers and general partners.

Total Return - The University invests its endowment portfolio and allocates the related earnings for expenditure in accordance with the total return concept. A distribution of endowment return that is independent of the cash yield and appreciation of investments earned during the year is provided for program support. The University has adopted an endowment spending policy designed specifically to stabilize annual spending levels and to preserve the real value of the endowment portfolio over time. The spending policy attempts to achieve these two objectives by using a long-term targeted spending rate combined with a smoothing rule, which adjusts spending gradually to changes in the endowment market value. An administrative charge is assessed against the funds when distributed.

The University uses a long-term targeted spending rate of 5.25%. The spending amount is calculated using 80% of the previous year's spending and 20% of the targeted long-term spending rate applied to the market value two years prior. The spending amount determined by the formula is adjusted for inflation and constrained so that the calculated rate is at least 4.0% and not more than 6.5% of the Endowment's market value. The actual rate of spending for 2016 and 2015, when measured against the previous year's June 30th endowment market value, was 4.5% for both years.

The University determines the expected return on endowment investments with the objective of producing a return exceeding the sum of inflation and the target spending rate. Asset allocation is the key factor driving expected return. Yale's asset allocation policy combines tested theory and informed market judgment to balance investment risks with the need for high returns. Both the need to provide resources for current operations and the desire to preserve the purchasing power of assets leads the endowment to be weighted toward equity.

The University manages the majority of its endowment in the University Long Term Investment Pool ("the Pool"). The Pool is unitized and allows for efficient investment among a diverse group of funds with varying restricted purposes. In addition to University funds, the Pool includes assets of affiliated entities where the University has established investment management agreements.

e. Land, Buildings and Equipment

Land, buildings and equipment are generally stated at cost. Buildings leased under capital leases are recorded at the lower of the net present value of the minimum lease payments or the fair value of the leased asset at the inception of the lease. Annual depreciation is calculated on a straight-line basis over useful lives, or over the lease term for capital leases, ranging from 15 to 50 years for buildings and improvements and 4 to 15 years for furnishings and equipment.

f. Other Assets

Capitalized software costs are included in other assets in the consolidated statement of financial position. Capitalized software costs are amortized on a straight line basis over the estimated useful lives of the software, ranging from 5 to 10 years.

g. Collections

Collections at Yale include works of art, literary works, historical treasures and artifacts that are maintained in the University's museums and libraries. These collections are protected and preserved for public exhibition, education, research and the furtherance of public service. Collections are not capitalized; purchases of collection items are recorded as operating expenses in the University's consolidated financial statements in the period in which the items are acquired.

h. Split-Interest Agreements

The University's split-interest agreements with donors consist primarily of charitable gift annuities, pooled income funds and irrevocable charitable remainder trusts for which the University serves as trustee. Assets are invested and payments are made to donors and/or other beneficiaries in accordance with the respective agreements.

Contribution revenues for charitable gift annuities and charitable remainder trusts are recognized at the date the agreements are established. In addition, the fair value of the estimated

future payments to be made to the beneficiaries under these agreements is recorded as a liability. For pooled income funds, contribution revenue is recognized upon establishment of the agreement at the fair value of the estimated future receipts, discounted for the estimated time period until culmination of the agreement.

i. Beneficial Interest in Trust Assets

The University is the beneficiary of certain perpetual trusts and charitable remainder trusts held and administered by others. The estimated fair values of trust assets are recognized as assets and as gift revenue when reported to the University.

j. Net Tuition, Room and Board

Tuition, room and board revenue is generated from an enrolled student population of approximately 12,400. The undergraduate population of approximately 5,500 is a diverse group attracted from across the United States and from many foreign countries. Foreign students account for approximately 11% (unaudited) of the undergraduate population. Net tuition, room and board revenue from undergraduate enrollment represents approximately 64.4% of total net tuition, room and board revenue in 2016.

The University maintains a policy of offering qualified applicants admission to Yale College without regard to financial circumstance, as well as meeting in full the demonstrated financial need of those admitted. Student need in all programs throughout the University is generally fulfilled through a combination of scholarships and fellowships, loans and employment during the academic year. Tuition, room and board revenue has been reduced by certain scholarships and fellowships in the amounts of \$280.6 million and \$262.0 million in 2016 and 2015, respectively.

k. Contributions

Unconditional promises to give that are expected to be collected within one year are recorded at their net realizable value. Amounts expected to be collected in future years are recorded at the present value of estimated future cash flows, which includes estimates for potential uncollectible receivables. The discount on those contributions is computed using an interest rate that reflects fair value applicable to the year in which the promise is received. Amortization of the discount is included in contribution revenue. Conditional promises to give are not recorded as support until such time as the conditions are substantially met.

l. Grant and Contract Income

The University receives grant and contract income from governmental and private sources. In 2016 and 2015, grant and contract income received from the Federal government totaled \$533.7 million and \$507.1 million, respectively. The University recognizes revenue associated with the direct costs of sponsored programs as the related qualified costs are incurred. Recovery of facilities and administrative costs of Federally sponsored programs is at rates negotiated with the University's cognizant agency, the Department of Health and Human Services.

m. Medical Services Income

The University has agreements with third-party payers, including health maintenance organizations that provide payment for medical services at amounts different from standard rates established by the University. Medical services income is reported net of contractual allowances from third-party payers and others for services rendered, and further adjusted for estimates of uncollectible amounts.

n. Net Assets Released from Restrictions

Reclassification of net assets is based upon the satisfaction of the purpose for which the net assets were restricted or the completion of a time stipulation. Restricted operating activity including contributions and net investment return earned, which are restricted, are reported as temporarily restricted support and reclassified to unrestricted when any donor-imposed restrictions are satisfied. Non-operating restricted net assets associated with building costs are reclassified to unrestricted net assets when the capital asset is placed in service.

o. Self-Insurance

The University self-insures at varying levels for unemployment, disability, workers' compensation, property losses, certain healthcare plans, general and professional liability; and obtains coverage through a captive insurance company for medical malpractice and related general liability losses. Insurance is purchased to cover liabilities above self-insurance limits. Estimates of retained exposures are accrued.

p. Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and judgments that affect the reported amounts of assets and liabilities and disclosures of contingencies at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period.

Significant estimates made by management include the valuation of alternative investments, the estimated net realizable value of receivables, estimated asset retirement

obligations, liabilities under split-interest agreements, and the actuarially determined employee benefit and self-insurance liabilities. Actual results could differ from those estimates.

q. Recent Authoritative Pronouncements

On July 1, 2015, the University adopted new guidance regarding *Simplifying the Presentation of Debt Issuance Costs*. This guidance requires the University present debt issuance costs related to a recognized debt liability in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. This disclosure change which was applied retrospectively is reported in Footnote 9 for both fiscal years 2016 and 2015. As a result of adopting this standard, certain prior year amounts were reclassified to conform to current year presentation.

The Financial Accounting Standards Board has issued standards that the University must consider for adoption over the next five years. Those standards include the following: (1) *Revenue from Contracts with Customers* effective for the fiscal year ending June 30, 2020, (2) *Presentation of Financial Statements for Not-for-Profit Entities* effective for the fiscal year ending June 30, 2019, and (3) *Leases* effective for the fiscal year ending June 30, 2021. Under *Revenue from Contracts with Customers*, recognition of revenue from customer contracts is a principles-based framework. *Presentation of Financial Statements for Not-for-Profit Entities* collapses the existing three-category classification of net assets into two categories, with donor restrictions and without donor restrictions. In addition, disclosures related to restricted gifts and the nature of expenses reported are expanded. The *Leases* standard aims to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. The University is currently evaluating the impact of the adoption of these standards on the consolidated financial statements.

r. Summarized 2015 Financial Information

The accompanying 2016 financial statements include selected comparative summarized financial information for 2015. Such information does not include sufficient detail to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the University's 2015 financial statements, from which the summarized financial information was derived. In addition, certain amounts have been reclassified to conform to the current year presentation, such as net medical services receivables and the related bad debt reserve within Footnote 3 and bond premiums and discounts related to debt within Footnote 9.

2. Investments

The University Endowment maintains a diversified investment portfolio with a strong orientation to equity investments and strategies designed to take advantage of market inefficiencies. The University's investment objectives are guided by its asset allocation policy and are achieved in partnership with external investment managers operating through a variety of investment vehicles, including separate accounts, limited partnerships and commingled funds. The University's heavy allocation to non-traditional asset classes, such as absolute return (hedge strategies), private equity (venture capital and leveraged buyouts), real estate, and natural resources (timber, energy and minerals), generates return potential and diversification in the portfolio.

The components of endowment and non-endowment investments, net of related liabilities at June 30 are presented below in thousands of dollars:

| | 2016 | 2015 |
|---------------------------------|--------------|--------------|
| Endowment investments: | | |
| Long term investment pool | \$24,961,935 | \$25,087,558 |
| Other | 451,214 | 455,425 |
| Total net endowment investments | 25,413,149 | 25,542,983 |
| Non-endowment investments: | | |
| Long term investment pool | 350,000 | 350,000 |
| Bonds | 552,296 | 546,674 |
| Derivatives | (639,630) | (269,998) |
| Other | 329,727 | 475,317 |
| Total non-endowment investments | 592,393 | 1,101,993 |
| Net investments, at fair value | \$26,005,542 | \$26,644,976 |

As described in Note 1d, investments are recorded at fair value. The following table summarizes the fair values of the University's investments by major type and related liabilities as of June 30, in thousands of dollars:

| | Level 1 | Level 2 | Level 3 | 2016 | 2015 |
|---|--------------|--------------|--------------|---------------|---------------|
| Investments, at fair value: | | | | | |
| Cash and cash equivalents | \$ 650,428 | \$ 22,401 | \$ - | \$ 672,829 | \$ 1,339,243 |
| Fixed income: | | | | | |
| US government securities | 2,058,197 | 72,537 | 60 | 2,130,794 | 2,228,409 |
| Foreign government securities | 190,584 | 70,294 | - | 260,878 | 167,982 |
| Corporate and other securities | 103,358 | 2,423,137 | 301,257 | 2,827,752 | 2,645,028 |
| Total fixed income | 2,352,139 | 2,565,968 | 301,317 | 5,219,424 | 5,041,419 |
| Common stock: | | | | | |
| Domestic | 1,659,367 | 99,632 | 62,771 | 1,821,770 | 1,450,152 |
| Foreign | 1,121,179 | 218,713 | 162,325 | 1,502,217 | 1,963,986 |
| Total common stock | 2,780,546 | 318,345 | 225,096 | 3,323,987 | 3,414,138 |
| Other equity investments: | | | | | |
| Foreign equity | - | - | 383,376 | 383,376 | 352,190 |
| Venture capital | - | - | 84,849 | 84,849 | 83,592 |
| Natural resources | - | - | 199,943 | 199,943 | 696,259 |
| Total other equity investments | - | - | 668,168 | 668,168 | 1,132,041 |
| Other investments | 397,832 | 779,093 | 323,768 | 1,500,693 | 1,442,399 |
| Total leveled investments | \$ 6,180,945 | \$ 3,685,807 | \$ 1,518,349 | 11,385,101 | 12,369,240 |
| Investments at NAV | | | | 19,525,731 | 18,823,264 |
| Total investments, at fair value | | | | 30,910,832 | 31,192,504 |
| Liabilities associated with investments: | | | | | |
| Securities sold, not yet purchased | \$ 354,379 | \$ 223,301 | \$ - | 577,680 | 614,338 |
| Repurchase agreements | - | 1,166,542 | - | 1,166,542 | 1,400,819 |
| Other liabilities | 516,385 | 1,113,843 | 1,190,768 | 2,820,996 | 2,244,797 |
| Total liabilities associated with investments | \$ 870,764 | \$ 2,503,686 | \$ 1,190,768 | 4,565,218 | 4,259,954 |
| Non-controlling interests | | | | 340,072 | 287,574 |
| Net investments, at fair value | | | | \$ 26,005,542 | \$ 26,644,976 |

While not part of a leveling category, fair values for certain investments held are based on the net asset value (NAV) of such investments as determined by the respective external investment managers, including general partners, if market values are not readily ascertainable. These valuations necessarily involve assumptions and methods that are reviewed by the University's Investments Office.

Investments at NAV as of June 30, in thousands include:

| | 2016 | 2015 |
|----------------------------------|---------------------|---------------------|
| Absolute return | \$ 4,370,188 | \$ 4,002,409 |
| Domestic | 691,275 | 589,988 |
| Foreign | 1,665,142 | 963,756 |
| Leveraged buyouts | 3,849,172 | 4,275,111 |
| Natural resources | 1,239,119 | 921,888 |
| Real estate | 3,455,128 | 3,764,516 |
| Venture capital | 4,255,707 | 4,305,596 |
| Total investments, at NAV | \$19,525,731 | \$18,823,264 |

Assets and liabilities of investment companies that are controlled by the University are consolidated for reporting purposes. Certain consolidated subsidiaries are controlled but not wholly owned by the University, the portion of a consolidated entity net assets that is not owned by the University is reported as a non-controlling interest.

The fair value of consolidated investment company assets and liabilities included in the University financial statements, in thousands of dollars, include:

| | 2016 | 2015 |
|---|--------------------|--------------------|
| Consolidated Investment Company Assets | \$5,151,393 | \$4,951,329 |
| Consolidated Investment Company Liabilities | 2,452,116 | 2,494,975 |
| | \$2,699,277 | \$2,456,354 |

Level 3 investments are valued by the University or by its external investment managers using valuation techniques standard in the industry in which they operate. The Yale Investments Office reviews these valuation methods and evaluates the appropriateness of these valuations each year. In certain circumstances, when the general partner does not provide a valuation or the valuation provided is not considered appropriate, the Investments Office will determine those values.

The following table summarizes quantitative inputs and assumptions used for Level 3 investments at June 30, 2016 for which fair value is based on unobservable inputs that are not developed by external investment managers. Significant increases or decreases in these unobservable inputs may result in significantly higher or lower valuation results.

| Asset Class | Fair Value (in 000's) | Valuation Technique | Significant Unobservable Input | Range | Weighted Average |
|-------------------------|------------------------------|-------------------------------|--|----------------------|---------------------|
| Equity Securities | \$ 693,321 | Market comparables | Enterprise value to EBITDA | 2.5x - 3.5x | 3.0x |
| | | | Enterprise value to AUM | 1.3% - 2.3% | 1.8% |
| | | | Liquidity Discount | 6.3% - 25.0% | 18.0% |
| | | | Discount for potential tax liability | 1.0% - 5.0% | 2.0% |
| | | Discounted Cash Flow | Discount rate | 35.0% | 35.0% |
| | | Dealer pricing | Indicative quotes | NA | NA |
| | | Liquidation model | Liquidity probability | 20.0% - 40.0% | 30.0% |
| | | Cost | Purchase price | NA | NA |
| Fixed Income Securities | \$ 301,317 | Market comparables | Enterprise value/EBITDA | 2.5x - 6.0x | 3.0x |
| | | | Illiquidity discount | 15.0% - 25.0% | 25.0% |
| | | | Discount rate | 35.0% | 35.0% |
| | | | Spread adjustment | 12.7% - 107.4% | 25.3% |
| | | Liquidation model | Recovery rate-accounts receivable | 87.0% - 88.0% | 88.0% |
| | | | Recovery rate-equipment | 87.0% - 88.0% | 88.0% |
| | | | Liquidity probability | 6.0% - 100.0% | 48.0% |
| | | | Recovery rate-litigation | 0.0% - 50.0% | 30.0% |
| | | | Recovery rate-other non-current assets | 55.0% - 100.0% | 78.0% |
| | | | Discounted cash flow | Discount rate | 6.0% - 50.0% |
| | | | Spread adjustment | -0.5% - 5.9% | 1.8% |
| | | Bond Plus Call Option Model | Volatility | 45.0% - 55.0% | 50.0% |
| | | | Discount rate | 20.0% - 24.0% | 22.0% |
| | | Multipart independent pricing | Indicative quotes | NA | NA |
| | | | Dealer pricing | Indicative quotes | NA |
| | | Natural Resources | \$ 199,943 | Discounted cash flow | Discount rate |
| Market comparable sale | Discount for litigation risk | | | 0.0% - 50.0% | 25.0% |
| Write off | Regulatory Change | | | 100.0% | 100.0% |
| Trusts | \$ 189,139 | Net present value | Discount rate | 3.0% | 3.0% |
| Other Investments | \$ 134,629 | Option Pricing Model | Volatility | 45.0% - 65.0% | 50.0% |
| Liabilities | \$ (1,190,768) | Various methods | University pooled unit market value | \$3,226.3 | \$3,226.3 |

The valuation process for investments at NAV and those categorized in Level 3 of the fair value hierarchy includes evaluating the operations and valuation procedures of external investment managers and the transparency of those processes through background and reference checks, attendance at investor meetings and periodic site visits. In determining the fair value of investments, Investments Office staff reviews periodic investor reports, interim and annual audited financial statements received from external investment managers, material quarter over quarter changes in valuation and assesses the impact of macro market factors on the performance. The Investments Office meets with the Investment Committee quarterly to review investment transactions and monitor performance of external investment managers.

Realized gains and losses are reported in total endowment return, net of fees. Included in net realized and unrealized (losses) in Level 3 reported below were unrealized (losses) that relate to assets held at June 30, 2016 and 2015 of (\$26.3) million and (\$291.6) million, respectively.

The table below presents the change in fair value measurements for the University's Level 3 investments during the year ended June 30, in millions of dollars:

| | Foreign Equity | Venture Capital | Natural Resources | Other | Liabilities | 2016 | 2015 |
|-----------------------------------|-------------------|--------------------|----------------------|--------|-------------|--------|----------|
| Beginning balance | \$ 352 | \$ 84 | \$ 419 | \$ 785 | \$ (1,161) | \$ 479 | \$ 1,715 |
| Realized and unrealized gain, net | 22 | 2 | (56) | 19 | 29 | 16 | (36) |
| Purchases | 9 | 1 | - | 159 | (64) | 105 | 515 |
| Sales | - | (2) | (5) | (130) | 5 | (132) | (884) |
| Transfers in | - | - | 6 | 53 | - | 59 | 33 |
| Transfers out | - | - | (164) | (36) | - | (200) | (864) |
| Ending balance | \$ 383 | \$ 85 | \$ 200 | \$ 850 | \$ (1,191) | \$ 327 | \$ 479 |

The transfers out of Level 3 consist primarily of investments reclassified from Level 3 to Investments at NAV due to the use of the practical expedient for certain limited partnership investments.

Agreements with external investment managers include certain redemption terms and restrictions as noted in the following table:

| Asset Class | Fair Value (in 000's) | Remaining Life | Unfunded Commitment (in 000's) | Redemption Terms | Redemption Restrictions |
|-------------------|--------------------------|----------------|--------------------------------------|--|--|
| Absolute Return | \$ 4,370,188 | No Limit | \$ 7,953 | Redemption terms range from monthly with 30 days notice to annually with 90 days notice. | Lock-up provisions range from none to 5 years. |
| Domestic Equity | 691,275 | No Limit | 56,879 | Redemption terms range from monthly with 3 days notice to annually with 90 days notice. | Lock-up provisions range from none to 7 years. |
| Foreign Equity | 2,048,518 | No Limit | 7,500 | Redemption terms range from monthly with 15 days notice to closed end structures not available for redemption. | Lock-up provisions range from none to 7 years. |
| Leveraged Buyouts | 3,849,172 | 1-10 years | 2,791,032 | Closed end funds not eligible for redemption. | Not redeemable. |
| Venture Capital | 4,340,556 | 1-10 years | 1,337,999 | Closed end funds not eligible for redemption. | Not redeemable. |
| Real Estate | 3,455,128 | 1-10 years | 1,508,041 | Closed end funds not eligible for redemption. | Not redeemable. |
| Natural Resources | 1,439,062 | 1-35 years | 508,888 | Closed end funds not eligible for redemption. | Not redeemable. |
| Total | <u>\$ 20,193,899</u> | | <u>\$ 6,218,292</u> | | |

The University has various sources of internal liquidity at its disposal, including cash, cash equivalents and marketable debt and equity securities. If called upon at June 30, 2016, management estimates that it could have liquidated approximately \$3.8 billion within 90 days (unaudited) to meet short-term needs.

The University enters into resell agreements (where securities are purchased under agreements to resell) and into repurchase agreements (where securities are sold under an agreement to repurchase). All resell agreements and repurchase agreements are carried at their contractual value which approximates fair value. Resell and repurchase agreements are presented gross in the University statement of financial position as investment assets and liabilities associated with investments.

The table below illustrates the exposure for these financial instruments at June 30, 2016, in thousands of dollars, where enforceable netting agreements are in place:

| | Assets | Liabilities |
|--|------------------|--------------|
| Resell and repurchase agreements | \$ 362,998 | \$ 1,166,542 |
| Amounts contractually eligible for offset | (298,112) | (298,112) |
| Collateral | (38,580) | (868,430) |
| Net exposure for resell and repurchase agreements | \$ 26,306 | \$ - |

Fixed income securities of \$654.9 million were provided at June 30, 2016 to collateralize securities sold, not yet purchased.

The University may employ derivatives and other strategies to (1) manage against market risks, (2) arbitrage mispricings of related securities and (3) replicate long or short positions more cost effectively. The University does not invest in derivatives for speculation. The fair value of derivative positions held at June 30, 2016 and related gain (loss) for the year, in thousands of dollars, were as follows:

| | Assets | Liabilities | Gain (Loss) |
|---|------------------|-------------------|---------------------|
| Endowment: | | | |
| Credit default swaps | \$ 168,116 | \$ (104,289) | \$ (10,530) |
| Interest rate swaps | 20,043 | (121,069) | (32,614) |
| Other | 95,466 | (58,853) | (19,424) |
| | <u>283,625</u> | <u>(284,211)</u> | <u>(62,568)</u> |
| Other: | | | |
| Interest rate swaps | - | (633,815) | (435,971) |
| Energy swaps | - | (5,953) | 2,150 |
| | <u>-</u> | <u>(639,768)</u> | <u>(433,821)</u> |
| Gross value of derivatives | 283,625 | (923,979) | \$ (496,389) |
| Other-counterparty netting | (185,820) | 185,820 | |
| Net collateral (received)/posted | (37,307) | 730,041 | |
| Total net exposure for derivatives | \$ 60,498 | \$ (8,118) | |

Derivatives are reported as other assets and other liabilities for fair value leveling purposes. The University initiates derivatives under legally enforceable master netting agreements. The net exposure for derivatives is presented above net of these master netting agreements and required collateral.

Credit default swaps

Credit default swaps are used to simulate long or short positions that are unavailable in the market or to reduce credit risk where exposure exists. The buyer of a credit default swap is obligated to pay to the seller a periodic stream of payments over the term of the contract in return for a contingent payment upon occurrence of a contracted credit event. As of June 30, 2016, the total notional amount of credit default swap contracts for buy protection amounts to \$2.7 billion and the notional amount related to sell protection is \$1.9 billion.

Interest rate swaps

Interest rate swaps are used to manage exposure to interest rate fluctuations.

The notional amount of contracts that pay based on fixed rates and receive based on variable rates at June 30, 2016 were \$2.1 billion. The notional amount of contracts that pay based on variable rates and receive based on fixed rates were \$3.6 billion at June 30, 2016.

Energy swaps

Energy swaps are used in connection with settling planned purchases of energy consumption and adjusting market exposures.

Derivative assets are reported as investments in the consolidated statement of financial position and derivative liabilities are reported as liabilities associated with investments. Gains and losses on derivatives used for investing are reported as part of total endowment return and gains and losses related to University debt management and energy consumption are reported as other investment loss in the consolidated statement of activities as non-operating activity.

Derivatives held by limited partnerships and commingled investment trusts in which Yale invests pose no off-balance sheet risk to the University due to the limited liability structure of the investments.

Certain investment transactions, including derivative financial instruments, necessarily involve counterparty credit exposure. Such exposure is monitored regularly by the University's Investments Office in accordance with established credit policies and other relevant criteria.

Endowment investments include beneficial interests in outside trusts of \$144.0 million and \$148.5 million at June 30, 2016 and 2015, respectively. Non-endowment investments include CHEFA proceeds available for approved construction and campus renovation projects of \$22.3 million and \$107.5 million at June 30, 2016 and June 30, 2015, respectively.

The following investments held under split-interest agreements are included in the endowment investment portfolio, in thousands of dollars:

| | 2016 | 2015 |
|-----------------------------|-------------------|-------------------|
| Charitable gift annuities | \$ 132,911 | \$ 165,678 |
| Charitable remainder trusts | 108,626 | 115,870 |
| Pooled income funds | 10,878 | 11,945 |
| | <u>\$ 252,415</u> | <u>\$ 293,493</u> |

Split interest liabilities reported in the consolidated statement of financial position total \$129.3 million and are recorded at fair value using Level 2 measurements.

The University has agreements with certain affiliates to invest in the University Long Term Investment Pool. The obligation to these affiliates included in other liabilities within liabilities associated with investments is \$1,117.2 million at June 30, 2016. The largest balance recorded is for Yale-New Haven Hospital with \$912.6 million invested at June 30, 2016.

A summary of the University's total investment return as reported in the consolidated statement of activities is presented below, in thousands of dollars:

| | 2016 | 2015 |
|--|-------------------|---------------------|
| Investment income | \$ 542,272 | \$ 322,800 |
| Realized and unrealized gain, net of investment management fees | 210,958 | 2,256,615 |
| Total endowment return | 753,230 | 2,579,415 |
| Other investment income (loss) | (368,652) | (42,540) |
| | <u>\$ 384,578</u> | <u>\$ 2,536,875</u> |

Endowment investment returns totaling \$1,153.4 million and \$1,082.5 million were allocated to operating activities in 2016 and 2015, respectively, using the spending policy described in Note 1d.

3. Accounts Receivable

Accounts receivable from the following sources were outstanding at June 30, in thousands of dollars:

| | 2016 | 2015 |
|---------------------------------------|------------|------------|
| Medical services, net | \$ 94,169 | \$ 101,726 |
| Grant and contracts | 73,939 | 61,323 |
| Affiliated organizations | 60,502 | 43,647 |
| Publications | 4,096 | 5,684 |
| Other | 22,158 | 18,391 |
| | 254,864 | 230,771 |
| Less: Allowance for doubtful accounts | (31,004) | (31,389) |
| | \$ 223,860 | \$ 199,382 |

Medical services receivables are net of an allowance for contractual allowances and charity adjustments, of \$105.1 million and \$107.3 million at June 30, 2016 and 2015, respectively. Revenue for patient care services are primarily based on negotiated contracts from managed care companies (63%), Medicare (19%), and Medicaid (8%). In addition, payments are received directly from patients (4%) and commercial insurance and others (6%).

The University assesses credit losses on all accounts receivable on a regular basis to determine the allowance for doubtful accounts.

The University and Yale-New Haven Hospital (the "Hospital") are parties to an affiliation agreement that establishes guidelines for the operation of activities between these two separate organizations. These guidelines set forth each organization's responsibility under the common goal of delivering comprehensive patient care services. The University provides professional services from faculty of the Yale School of Medicine and a variety of other administrative and clinical services. The net receivable from the Hospital amounted to \$49.3 million and \$33.0 million at June 30, 2016 and 2015, respectively. Balances are settled in the ordinary course of business. The University recognized \$244.8 million in revenue and incurred \$75.5 million in expenses related to activities with the Hospital during the period ended June 30, 2016.

4. Contributions Receivable

Contributions receivable consist of the following unconditional promises to give as of June 30, in thousands of dollars:

| | 2016 | 2015 |
|--------------------------------------|------------|------------|
| Purpose: | | |
| Endowment | \$ 213,518 | \$ 218,302 |
| Capital purposes | 124,713 | 73,982 |
| Operating programs | 454,677 | 439,249 |
| Gross unconditional promises to give | 792,908 | 731,533 |
| Less: Discount to present value | (149,409) | (166,202) |
| Allowance for uncollectible accounts | (75,553) | (56,716) |
| | \$ 567,946 | \$ 508,615 |
| Amounts due in: | | |
| Less than one year | \$ 211,864 | \$ 190,459 |
| One to five years | 318,441 | 284,425 |
| More than five years | 262,603 | 256,649 |
| | \$ 792,908 | \$ 731,533 |

Discount rates used to calculate the present value of contributions receivable ranged from 0.33% to 7.0% at June 30, 2016 and 2015.

At June 30, 2016, the University had conditional pledges that depend on the occurrence of a future and uncertain events of approximately \$169.3 million. Conditional pledges are recognized when the condition is met.

5. Notes Receivable

Notes receivable at June 30, in thousands of dollars, include:

| | 2016 | 2015 |
|---------------------------------------|------------|------------|
| Institutional student loans | \$ 50,114 | \$ 53,709 |
| Federally-sponsored student loans | 33,684 | 34,163 |
| Notes receivable | 54,104 | 54,084 |
| | 137,902 | 141,956 |
| Less: Allowance for doubtful accounts | (10,824) | (10,543) |
| | \$ 127,078 | \$ 131,413 |

Student Loans

Institutional student loans include donor funds restricted for student loan purposes and University funds made available to meet demonstrated need in excess of all other sources of student loan borrowings. Interest accrues at fixed rates upon loan disbursement. Federally-sponsored student loans have mandated interest rates and repayment terms subject to restrictions as to their transfer and disposition.

Management regularly assesses the adequacy of the allowance for credit losses for student loans by performing ongoing evaluations of the student loan portfolio, including such factors as the differing economic risks associated with each loan category, the financial condition of specific borrowers, the level of delinquent loans, and, where applicable, the existence of any guarantees or indemnifications. Federally-sponsored loans represent amounts due from current and former students under certain Federal Loan Programs. Loans disbursed under these programs are able to be assigned to the Federal government in certain non-repayment situations. In these situations, the Federal portion of the loan balance is guaranteed.

Amounts received from the Federal government to fund a portion of the Federally-sponsored student loans are ultimately refundable to the Federal government and have been reported as advances from Federal government for student loans in the consolidated statement of financial position. The recorded value of student loan instruments approximates fair value.

Notes Receivable

The University and Yale New Haven Hospital (the "Hospital") entered into an agreement under which the Hospital will pay the University over a 40 year term to reimburse the University for advances made in connection with the construction of Hospital facilities. The payment includes interest based on the 5 year Treasury bill plus 175 basis points, which resets every 5 years. In 2015, the interest rate was reset, and the monthly payment was adjusted accordingly.

6. Other Assets

Other assets at June 30, in thousands of dollars, include:

| | 2016 | 2015 |
|---|-------------------|-------------------|
| Insurance receivable | \$ 55,163 | \$ 22,609 |
| Software costs, net of accumulated amortization | 53,745 | 66,514 |
| Deferred expenses | 32,576 | 37,364 |
| Inventories | 15,907 | 14,921 |
| | <u>\$ 157,391</u> | <u>\$ 141,408</u> |

Amortization expense related to other assets included in operating expenses amounted to \$16.8 million and \$23.1 million in 2016 and 2015, respectively.

7. Land, Buildings and Equipment

Land, buildings and equipment at June 30, less accumulated depreciation, in thousands of dollars, are as follows:

| | 2016 | 2015 |
|---|---------------------|---------------------|
| Land and real estate improvements | \$ 135,249 | \$ 134,327 |
| Buildings | 5,891,011 | 5,756,767 |
| Buildings under capital leases | 50,058 | 61,665 |
| Equipment | 590,745 | 665,964 |
| | <u>6,667,063</u> | <u>6,618,723</u> |
| Less: Accumulated depreciation and amortization | (2,495,654) | (2,400,179) |
| | <u>4,171,409</u> | <u>4,218,544</u> |
| Construction in progress | 608,010 | 291,759 |
| | <u>\$ 4,779,419</u> | <u>\$ 4,510,303</u> |

Depreciation expense included in operating expenses amounted to \$241.7 million and \$237.2 million in 2016 and 2015, respectively. Amortization expense on capital lease assets amounted to \$2.2 million in 2016 and 2015.

8. Other Liabilities

Other liabilities consist of obligations of the University that will be paid over extended periods and consist of the following, in thousands of dollars:

| | 2016 | 2015 |
|---------------------------------|---------------------|---------------------|
| Employee benefit obligations | \$ 1,388,004 | \$ 955,440 |
| Compensated absences | 64,321 | 64,097 |
| Asset retirement obligations | 39,100 | 36,800 |
| Financial aid grant obligations | 60,029 | 50,703 |
| Other | 80,070 | 53,836 |
| | <u>\$ 1,631,524</u> | <u>\$ 1,160,876</u> |

Included in employee benefit obligations are defined benefit plan liabilities in excess of plan assets. These liabilities amounted to \$1,273.9 million at June 30, 2016 and \$852.4 million at June 30, 2015. (See Note 11)

9. Bonds and Notes Payable

Bonds and notes payable outstanding at June 30, in thousands of dollars, include:

| | Effective Interest Rate | Year of Maturity | Outstanding Balance | |
|--|----------------------------|---------------------|---------------------|--------------|
| | June 30, 2016 | | 2016 | 2015 |
| Connecticut Health and Educational Facilities Authority (CHEFA) tax-exempt bonds: | | | | |
| Series S | 0.12% | 2027 | \$ 135,865 | \$ 135,865 |
| Series T | 2.65% | 2029 | 250,000 | 250,000 |
| Series U | 1.00% | 2033 | 250,000 | 250,000 |
| Series V | 0.07% | 2036 | 200,000 | 200,000 |
| Series X | 2.88% | 2037 | 250,000 | 250,000 |
| Series Y | - | 2016 | - | 300,000 |
| Series Z | 4.86% | 2042 | 600,000 | 600,000 |
| Series 2010A | 2.76% | 2025/2040/2049 | 529,975 | 529,975 |
| Series 2013A | 1.35% | 2042 | 100,000 | 100,000 |
| Series 2014A | 0.80% | 2048 | 250,000 | 250,000 |
| Series 2015A | 1.38% | 2035 | 300,000 | - |
| Total CHEFA bonds | | | 2,865,840 | 2,865,840 |
| Medium-term notes | 7.38% | 2096 | 125,000 | 125,000 |
| Medium-term notes Series B | 2.09% | 2019 | 250,000 | 250,000 |
| Commercial paper | 0.26% | 2016 | 181,445 | 181,445 |
| Capital leases - buildings | 5.75% | 2032 | 42,424 | 54,265 |
| Other notes payable | 7.85% | 2020 | 1,758 | 2,086 |
| U.S. Department of Energy | 2.72% | 2029 | 58,055 | 62,840 |
| Principal amount | | | 3,524,522 | 3,541,476 |
| Less: Bond issue costs | | | (13,037) | (14,619) |
| Plus: Unamortized premiums and discounts, net | | | 22,187 | 30,965 |
| | | | \$3,533,672 | \$ 3,557,822 |

In July 2015, CHEFA Series 2015A was issued to redeem CHEFA Series Y-1, Y-2, and Y-3. Series 2015A consists of \$300 million bonds maturing July 2035 and bears interest at a fixed term rate of 1.375 % through July 10, 2018.

CHEFA Series 2014A issued in July 2014 matures on July 2048 and bears interest at a fixed rate of 0.80% through the initial term period ending July 2017.

CHEFA Series 2013A originally issued in July 2013 was used to redeem CHEFA Series X-1 and matures July 2042. Series 2013A has an initial interest rate of 1.35% through the term rate period ending July 20, 2016. In July 2016, CHEFA Series 2013A was remarketed to a new fixed rate term of 1.00% through June 30, 2019.

CHEFA Series 2010A bonds consist of 1) \$80 million Series 2010A-1 bonds bearing interest at a fixed rate of 5% and maturing July 2025; 2) \$150 million Series 2010A-2 bonds bearing interest at a fixed rate of 5% and maturing July 2040; 3) \$150 million 2010A-3 bonds

bearing interest at a fixed rate of 5% and maturing July 2040; 3) \$150 million Series 2010A-3 bonds bearing interest at a fixed rate of 0.875% through February 2018 and maturing July 2049; and 4) \$150 million Series 2010A-4 bonds maturing July 2019. These bonds include a net premium of \$11.9 million as of June 2016. Series 2010A-4 was remarketed in February 2015 to a new fixed rate term of 1.2% through January 2019. Series 2010A-1 and 2010A-2 bonds are subject to an optional redemption by the university in July 2018.

CHEFA Series Z bonds consist of 1) \$400 million Series Z-1 bonds bearing interest at a fixed rate of 5%; 2) \$100 million Series Z-2 bonds bearing interest at a fixed rate of 5.05%; and 3) \$100 million Series Z-3 bonds bearing interest at a fixed rate of 5.05%. Z-1 bonds include a net premium of \$10.7 million as of June 30, 2016. The original premium associated with this issuance is being amortized over the life of the bonds. Series Z-1, Z-2 and Z-3 bonds mature on July 1, 2042. In July 2016, Series Z-1 bonds were redeemed by new CHEFA Series 2016A maturing in July 2042. Series 2016A bonds consist of 1) \$150 million Series 2016A-1 bonds maturing July 2042 and bearing interest at a fixed rate of 1% through June 30, 2019; and 2) \$249.3 million Series 2016A-2 bonds bearing interest at a fixed rate of 2% through June 30, 2026, maturing July 2042. Series Z-2 and Z-3 bonds are subject to an optional redemption in July 2017.

CHEFA Series X bonds consist of 1) \$125 million Series X-2 which was remarketed in February 2015 from a variable interest rate to a fixed term rate of 0.90% through January 2018; and 2) \$125 million Series X-3 variable rate bonds, bearing interest at a daily rate, which were converted to a fixed interest rate of 4.85% on May 1, 2008. Series X-2 and X-3 bonds mature on July 1, 2037. Series X-3 bonds are subject to an optional redemption in July 2017.

CHEFA Series V bonds bear interest at a daily rate and mature on July 1, 2036. The bonds may be converted from a daily rate period to other variable rate modes or to a fixed rate mode at the discretion of the University.

CHEFA Series U bonds were remarketed in February 2016 from a variable rate to a fixed term rate of 1% through February 5, 2019. Series U bonds mature July 1, 2033.

CHEFA Series T bonds consist of 1) \$125 million Series T-1 bonds bearing interest at a fixed rate of 4.7%; and 2) \$125 million Series T-2 bonds which were remarketed in February 2015 from a variable interest rate to a fixed term rate of 0.60% through January 2017. Series T-1 bonds are subject to an optional redemption in July 2017.

CHEFA Series S bonds bear interest at a money market municipal rate and are outstanding for varying interest rate periods of 270 days or less. The bonds may be converted from the money market mode to other variable rate modes or to a fixed rate mode at the discretion of the University.

Medium-term notes bear interest at a fixed rate of 7.38% and mature in 2096, with an optional redemption provision in the year 2026. The discount associated with these notes was \$326 thousand at June 30, 2016.

Medium-term notes Series B bear interest at a fixed rate of 2.086% and mature in April 2019.

Commercial paper consists of notes issued in the short-term taxable market, and is sold at a discount from par. The maturities of individual notes are issued in ranges from one day to no more than one year, and fall on average in a range of thirty to sixty days.

Certain lease agreements entered into by the University qualify as capital leases with obligations of \$42.4 million and \$54.3 million at June 30, 2016 and 2015, respectively. The agreements call for the University to lease the buildings through 2032.

The University financed a wind energy project, Record Hill Wind, LLC, through a financing arrangement with the Department of Energy. The financing arrangement is non-recourse debt to the University and bears interest at rates ranging from 2.236% to 2.776%.

Total interest expense incurred on indebtedness was \$125.2 million and \$140.0 million in 2016 and 2015, respectively. Interest capitalized to land, buildings and equipment totaled \$3.2 million and \$1.7 million in 2016 and 2015, respectively. Amortization expense related to bond issue costs included in operating expenses amounted to \$1.4 million and \$1.1 million in 2016 and 2015, respectively.

Scheduled maturities of the facilities debt obligations, in thousands of dollars, are as follows:

| | | |
|------------|----|-----------|
| 2017 | \$ | 186,926 |
| 2018 | | 5,642 |
| 2019 | | 255,817 |
| 2020 | | 7,044 |
| 2021 | | 6,913 |
| Thereafter | | 3,062,180 |

Certain CHEFA Series are subject to tender by bondholders. To the extent all bonds subject to tender could not be remarketed, \$1.5 billion of bonds scheduled for maturity between 2029 and 2049 would be due when tendered.

10. Retirement Plans – Defined Contribution

The University maintains defined contribution plans for faculty and certain staff employees. Participants may direct employee and employer contributions to the Teachers' Insurance and Annuity Association (TIAA) and College Retirement Equities Fund (CREF), as well as other investment options. Retirement expense for this plan was \$103.5 million and \$99.6 million in 2016 and 2015, respectively.

11. Pension and Postretirement Plans – Defined Benefit

The University has a noncontributory, defined benefit pension plan for staff. The staff pension plan provides payments based on years of participation and the employee's highest annual rate of earnings during the last five years of employment.

In addition, the University provides postretirement benefits including health benefits based on years of service, life insurance and a pay-out of unused sick time. While the University's subsidy of the cost of comprehensive health care benefits differs among retiree groups, substantially all employees who meet minimum age and service requirements and retire from the University are eligible for these benefits. Non faculty employees are paid 50% of unused sick time and receive life insurance benefits upon retirement from active status.

The University uses a June 30th measurement date for its defined benefit plans.

The following table sets forth the pension and postretirement plans' funded status that is reported in the consolidated statement of financial position at June 30, in thousands of dollars:

| | Pension | | Postretirement | |
|---|--------------|--------------|----------------|--------------|
| | 2016 | 2015 | 2016 | 2015 |
| Change in benefit obligation: | | | | |
| Benefit obligation, beginning of year | \$ 1,370,606 | \$ 1,265,717 | \$ 1,040,723 | \$ 901,886 |
| Service cost, excluding assumed administrative expenses | 50,569 | 48,622 | 45,171 | 39,352 |
| Interest cost | 64,788 | 57,420 | 48,288 | 40,049 |
| Benefit payments | (43,165) | (38,143) | (27,483) | (26,598) |
| Assumption changes | 194,724 | 37,341 | 157,306 | 104,439 |
| Actuarial loss (gain) | 22,123 | (351) | (49,864) | (18,405) |
| Benefit obligation, end of year | \$ 1,659,645 | \$ 1,370,606 | \$ 1,214,141 | \$ 1,040,723 |
| Change in plan assets: | | | | |
| Fair value, beginning of year | \$ 1,110,000 | \$ 1,055,993 | \$ 448,906 | \$ 436,082 |
| Actual return on plan assets | 15,033 | 58,672 | 8,396 | 29,761 |
| University contributions | 87,729 | 35,701 | 3,852 | 10,686 |
| Benefits and expenses paid | (45,428) | (40,366) | (28,614) | (27,623) |
| Fair value, end of year | \$ 1,167,334 | \$ 1,110,000 | \$ 432,540 | \$ 448,906 |
| Funded Status | \$ (492,311) | \$ (260,606) | \$ (781,601) | \$ (591,817) |

Funded Status

The funded status consists of the unfunded net periodic benefit costs recognized in operating activity and the change in funded status reported as non-operating activity. The components of the adjustment to non-operating results for the year ended June 30, 2016, in thousands of dollars, include:

| | Pension | Postretirement | Total |
|---|------------|----------------|------------|
| Unrecognized net actuarial loss | \$ 285,616 | \$ 131,024 | \$ 416,640 |
| Amortization of unrecognized obligation | (11,473) | (11,593) | (23,066) |
| | \$ 274,143 | \$ 119,431 | \$ 393,574 |

The cumulative amounts of these adjustments reported as deductions to net assets in the consolidated statement of financial position at June 30, 2016, in thousands of dollars, include:

| | Pension | Postretirement | Total |
|---------------------------------|------------|----------------|------------|
| Unrecognized net actuarial loss | \$ 384,490 | \$ 360,832 | \$ 745,322 |
| Unrecognized prior service cost | 24,302 | 120 | 24,422 |
| | \$ 408,792 | \$ 360,952 | \$ 769,744 |

Amounts recorded as an adjustment at June 30, 2016 that are expected to be amortized into operating activity during fiscal year 2017, in thousands of dollars, include:

| | Pension | Postretirement | Total |
|--------------------|-----------|----------------|-----------|
| Net actuarial loss | \$ 16,848 | \$ 15,945 | \$ 32,793 |
| Prior service cost | 3,572 | 50 | 3,622 |
| | \$ 20,420 | \$ 15,995 | \$ 36,415 |

Actuarial gains or losses and prior service costs resulting from plan amendments are amortized over the average remaining years of service of active participants.

Benefit Obligation

The benefit obligation represents the actuarial present value of future payments to plan participants for services rendered prior to that date, based on the pension benefit formula. In calculating the value, the participants' compensation levels are projected to retirement.

The accumulated benefit obligation differs from the benefit obligation above in that it does not consider assumptions about future compensation levels. It represents the actuarial present value of future payments to plan participants using current and past compensation levels. The accumulated benefit obligation for the pension plan was \$1,394.8 million at June 30, 2016 and \$1,131.3 million at June 30, 2015.

There were no significant plan amendments during the fiscal year ended June 30, 2016.

Assumptions used in determining the year end obligation of the pension and postretirement plans are:

| | 2016 | 2015 |
|--|-----------------------------------|-----------------------------------|
| Weighted-average discount rate | 4.00% | 4.75% |
| Increase in future compensation levels | 3.75% | 3.77% |
| Projected health care cost trend rate (pre-65/post-65) | 6.75% / 6.45% | 7.00% / 5.40% |
| Ultimate trend rate (pre-65/post-65) | 5.00% / 5.00% | 5.00% / 5.00% |
| Year ultimate trend rate is achieved | 2024 | 2024 |
| Mortality | RP2014 Aggregate, Scale MP2014 | RP2014 Aggregate, Scale MP2014 |

Changes in assumptions during the year resulted in an increase to the pension benefit obligation and an increase to the postretirement benefit obligation at June 30, 2016, as follows, in thousands of dollars:

| | Pension | | Postretirement | | Total |
|---------------|---------|---------|----------------|---------|------------|
| Discount rate | \$ | 194,869 | \$ | 162,435 | \$ 357,304 |
| Inflation | | (145) | | (5,129) | (5,274) |
| | \$ | 194,724 | \$ | 157,306 | \$ 352,030 |

Net Periodic Benefit Cost

Net periodic benefit cost for the plans includes the following components, in thousands of dollars:

| | Pension | | Postretirement | |
|--------------------------------|-----------|-----------|----------------|-----------|
| | 2016 | 2015 | 2016 | 2015 |
| Service cost | \$ 50,569 | \$ 48,622 | \$ 45,171 | \$ 39,352 |
| Administrative expenses | 2,200 | 2,000 | 1,000 | 900 |
| Interest cost | 64,788 | 57,420 | 48,288 | 40,049 |
| Expected return on plan assets | (83,739) | (72,880) | (31,847) | (29,656) |
| Net amortization: | | | | |
| Prior service cost | 10,200 | 10,535 | 1,191 | 1,283 |
| Net loss | 1,273 | - | 10,402 | 6,393 |
| Net periodic benefit cost | \$ 45,291 | \$ 45,697 | \$ 74,205 | \$ 58,321 |

Net periodic benefit costs are included as a part of operating expense.

Assumptions used in determining the net periodic benefit cost of the pension and postretirement plans are:

| | 2016 | 2015 |
|--|-----------------------------------|--------------------------------------|
| Weighted-average discount rate | 4.75% | 4.60% |
| Expected long-term rate of return | 7.75% | 7.50% |
| Compensation increase | 3.77% | 3.94% |
| Health care cost increase (pre-65/post-65) | 7.00% / 5.40% | 7.25% / 6.75% |
| Ultimate trend rate (pre-65/post-65) | 5.00% / 5.00% | 5.00% / 5.00% |
| Year ultimate trend rate is achieved | 2024 | 2020 |
| Mortality | RP2014 Aggregate, Scale MP2014 | RP2000CH, Generational Projection |

The health care cost trend rate assumption has a significant effect on the amounts reported. For the fiscal year ended June 30, 2016, a one percent change in the health care cost trend rate would cause the postretirement benefit obligation at June 30, 2016, to change by approximately 19.3% and would also cause the sum of the service cost and interest cost components of postretirement expense to change by approximately 24.2%.

Plan Assets

The defined benefit plan assets are valued utilizing the same fair value hierarchy as the University's investments as described in Note 1d.

The following table summarizes the fair values of investments by major type held by the staff pension plan at June 30, in thousands of dollars:

| | Level 1 | Level 2 | Level 3 | 2016 | 2015 |
|---|------------|-----------|----------|--------------|--------------|
| Investments, at fair value: | | | | | |
| Cash and cash equivalents | \$ 37,943 | \$ - | \$ - | \$ 37,943 | \$ 38,111 |
| US government securities | 82,507 | - | - | 82,507 | 98,567 |
| Equity investments: | | | | | |
| Domestic | 45,681 | - | 789 | 46,470 | 63,202 |
| Foreign | 913 | 90,359 | - | 91,272 | 93,285 |
| Total equity investments | 46,594 | 90,359 | 789 | 137,742 | 156,487 |
| Limited partnerships: | | | | | |
| Natural resources | - | - | 7,021 | 7,021 | 20,828 |
| Total limited partnerships | - | - | 7,021 | 7,021 | 20,828 |
| Total leveled investments | \$ 167,044 | \$ 90,359 | \$ 7,810 | 265,213 | 313,993 |
| Investments at NAV | | | | 917,214 | 805,072 |
| Total investments, at fair value | | | | 1,182,427 | 1,119,065 |
| Liabilities associated with investments | \$ 15,004 | \$ 89 | \$ - | 15,093 | 9,065 |
| Net investments, at fair value | | | | \$ 1,167,334 | \$ 1,110,000 |

The following table summarizes the fair values of investments by major type held by the retiree health plan at June 30, in thousands of dollars:

| | Level 1 | Level 2 | Level 3 | 2016 | 2015 |
|---|-----------|-----------|----------|------------|------------|
| Investments, at fair value: | | | | | |
| Cash and cash equivalents | \$ 7,725 | \$ - | \$ - | \$ 7,725 | \$ 26,809 |
| US government securities | 11,225 | - | - | 11,225 | 12,834 |
| Equity investments: | | | | | |
| Domestic | 5,572 | - | - | 5,572 | 14,375 |
| Foreign | 345 | 31,764 | - | 32,109 | 36,971 |
| Total equity investments | 5,917 | 31,764 | - | 37,681 | 51,346 |
| Limited partnerships: | | | | | |
| Natural resources | - | - | 3,438 | 3,438 | 10,976 |
| Total limited partnerships | - | - | 3,438 | 3,438 | 10,976 |
| Total leveled investments | \$ 24,867 | \$ 31,764 | \$ 3,438 | 60,069 | 101,965 |
| Investments at NAV | | | | 376,101 | 354,047 |
| Total investments, at fair value | | | | 436,170 | 456,012 |
| Liabilities associated with investments | \$ 71 | \$ 53 | \$ - | 124 | 5,012 |
| Net investments, at fair value | | | | \$ 436,046 | \$ 451,000 |

The table below represents the change in fair value measurements for Level 3 investments held by the staff pension plan and the retiree health plan for the plans' year ended June 30, 2016, in thousands of dollars:

| | | Pension | Retiree Health |
|-----------------------------------|----|----------|----------------|
| Beginning balance | \$ | 20,828 | \$ 10,976 |
| Realized and unrealized loss, net | | (3,292) | (1,230) |
| Transfer in | | 938 | - |
| Transfer out | | (10,664) | (6,308) |
| Ending balance | \$ | 7,810 | \$ 3,438 |

The unrealized portion of the loss in Level 3 reported above that relates to assets held at June 30, 2016 by the staff pension plan and the retiree health plan, represents a net loss of \$3.3 million and a net loss of \$1.2 million, respectively.

The investment objective for the pension and retiree health plans seeks a positive long-term total return after inflation to meet the University's current and future plan obligations.

Asset allocations for both plans combine tested theory and informed market judgment to balance investment risks with the need for high returns.

Plan asset allocations by category at June 30 are as follows:

| | Pension | | Retiree Health | |
|-------------------|---------|-------|----------------|-------|
| | 2016 | 2015 | 2016 | 2015 |
| Absolute return | 27.5% | 24.7% | 26.6% | 23.7% |
| Domestic equity | 9.1% | 9.8% | 8.5% | 9.7% |
| Fixed income | 7.1% | 8.9% | 2.6% | 2.8% |
| Foreign equity | 23.2% | 20.9% | 20.4% | 19.9% |
| Leveraged buyouts | 7.5% | 8.6% | 9.0% | 9.1% |
| Venture capital | 7.7% | 7.2% | 9.3% | 8.0% |
| Real estate | 8.4% | 9.2% | 13.6% | 13.6% |
| Natural resources | 7.6% | 7.9% | 7.3% | 7.9% |
| Cash | 1.9% | 2.8% | 2.7% | 5.3% |

The pension and retiree health long-term rate of return assumption is determined by adding expected inflation to expected long-term real returns of various asset classes, taking into account expected volatility and correlation between the returns of various asset classes.

Contributions

Annual contributions for the pension and retiree health plans are determined by the University considering calculations prepared by the plans' actuary as well as other factors. Expected contributions in fiscal 2017 to the pension plan are \$74.9 million. No contribution is planned to the retiree health plan.

Benefit Payments

The following estimated benefit payments, which reflect expected future service, are expected to be paid out of the plans, in thousands of dollars:

| Fiscal year | Pension | Postretirement |
|-------------|-----------|----------------|
| 2017 | \$ 48,383 | \$ 29,000 |
| 2018 | 51,922 | 32,200 |
| 2019 | 55,786 | 34,900 |
| 2020 | 59,797 | 37,900 |
| 2021 | 64,022 | 41,300 |
| 2022-2025 | 389,439 | 254,600 |

12. Net Assets

The University's net assets as of June 30, in thousands of dollars, includes:

| | 2016 | 2015 |
|------------------------------|--------------|--------------|
| Permanently Restricted: | | |
| Endowment funds | \$ 3,622,688 | \$ 3,444,863 |
| Student loan funds | 42,123 | 41,295 |
| Total permanently restricted | 3,664,811 | 3,486,158 |
| Temporarily Restricted: | | |
| Endowment funds | 17,965,741 | 18,261,904 |
| Capital | 420,923 | 370,258 |
| Operating funds | 469,693 | 462,819 |
| Total temporarily restricted | 18,856,357 | 19,094,981 |
| Unrestricted: | | |
| Yale University | 3,677,192 | 4,516,460 |
| Non-controlling interest | 340,072 | 287,574 |
| Total unrestricted | 4,017,264 | 4,804,034 |
| Total net assets | \$26,538,432 | \$27,385,173 |

Yale's endowment consists of approximately 7,300 funds established for a variety of purposes.

The endowment includes both donor-restricted endowment funds and funds designated by the Yale Corporation to function as endowments. The University endowment fund composition by fund type as of June 30, in thousands of dollars, includes:

| | Unrestricted | Temporarily Restricted | Permanently Restricted | 2016 | 2015 |
|----------------------------|--------------------|---------------------------|---------------------------|---------------------|---------------------|
| Donor-restricted endowment | \$ - | \$17,695,482 | \$3,622,688 | \$21,318,170 | \$21,470,763 |
| Board-designated endowment | 3,821,817 | 270,259 | - | 4,092,076 | 4,100,827 |
| | <u>\$3,821,817</u> | <u>\$17,965,741</u> | <u>\$3,622,688</u> | <u>\$25,410,246</u> | <u>\$25,571,590</u> |

Changes in endowment net assets for the fiscal year ended June 30, in thousands of dollars, were:

| | Unrestricted | Temporarily Restricted | Permanently Restricted | 2016 | 2015 |
|---|--------------------|---------------------------|---------------------------|---------------------|---------------------|
| Endowment net assets, beginning of year | \$3,864,823 | \$18,261,904 | \$3,444,863 | \$25,571,590 | \$23,894,719 |
| Investment return: | | | | | |
| Investment income | 89,433 | 451,329 | 1,510 | 542,272 | 322,800 |
| Net appreciation | 34,851 | 175,463 | 644 | 210,958 | 2,256,615 |
| Total investment return | 124,284 | 626,792 | 2,154 | 753,230 | 2,579,415 |
| Contributions | 1,500 | 26,375 | 154,313 | 182,188 | 117,434 |
| Allocation of endowment spending | (190,103) | (966,196) | 2,314 | (1,153,985) | (1,083,067) |
| Other (decreases) increases | 21,313 | 16,866 | 19,044 | 57,223 | 63,089 |
| Endowment net assets, end of year | <u>\$3,821,817</u> | <u>\$17,965,741</u> | <u>\$3,622,688</u> | <u>\$25,410,246</u> | <u>\$25,571,590</u> |

13. Functional Classification of Operating Expenses

Operating expenses reported by functional categories, include allocations of costs for operation and maintenance of plant, interest on indebtedness and depreciation expense. Operating expenses by functional classification for the years ended June 30, 2016 and 2015, in thousands of dollars, were as follows:

| | 2016 | 2015 |
|--|---------------------|---------------------|
| Instruction and departmental research | \$ 924,431 | \$ 885,492 |
| Patient care and other related services | 795,197 | 745,919 |
| Organized research | 528,106 | 494,588 |
| Student aid and services | 415,959 | 400,530 |
| Libraries and other academic support | 310,734 | 287,805 |
| Public service | 143,625 | 142,936 |
| Administration and other institutional support | 246,154 | 230,338 |
| Total expenses | <u>\$ 3,364,206</u> | <u>\$ 3,187,608</u> |

14. Commitments and Contingencies

The University is involved in various legal actions arising in the normal course of activities and is also subject to periodic audits and inquiries by various regulatory agencies. Although the ultimate outcome is not determinable at this time, management, after taking into consideration advice of legal counsel, believes that the resolution of these pending matters should not have a material adverse effect upon the University's financial position.

Minimum lease commitments at June 30, 2016, under agreements to lease space, in thousands of dollars, are as follows:

| | Operating Lease Payments | Capital Lease Payments |
|----------------------------|-----------------------------|---------------------------|
| 2017 | \$ 8,771 | \$ 9,030 |
| 2018 | 6,275 | 9,086 |
| 2019 | 5,287 | 9,144 |
| 2020 | 5,010 | 9,122 |
| 2021 | 3,156 | 8,969 |
| Thereafter | 19,050 | 100,659 |
| | 47,549 | 146,010 |
| Executory costs | - | (79,126) |
| Interest on capital leases | - | (24,460) |
| | \$ 47,549 | \$ 42,424 |

The University has outstanding commitments on contracts to construct campus facilities in the amount of \$311.8 million at June 30, 2016. Funding for these projects is expected to come from capital replacement reserves and gifts.

15. Subsequent Events

Management has evaluated subsequent events for the period after June 30, 2016, through October 21, 2016, the date the consolidated financial statements were available to be issued.

The President and Fellows of Yale University

President

Peter Salovey, A.B., A.M., PH.D.

Fellows

His Excellency the Governor
of Connecticut, *ex officio*

Her Honor the Lieutenant Governor
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THE YALE CENTER FOR BRITISH ART (the Center), architect Louis I. Kahn’s last masterpiece, first opened its doors in 1977 and holds the largest and most comprehensive collection of British art outside the United Kingdom, presenting the development of British art and culture from the Elizabethan period to the present day. Together with the Reference Library and Archives, the Center’s collections of paintings, sculpture, drawings, prints, rare books, and manuscripts provide an exceptional resource for understanding the story of British art.

The Center’s collections of British art and books were the gift of Paul Mellon (1907–1999), a graduate of Yale College (Class of 1929). The collections’ particular strength in the art and books of the eighteenth century reflect the taste and enthusiasms of Paul Mellon.

The Center’s collections include the following:

- 2,000 paintings and 250 sculptures from the medieval to the contemporary
- 20,000 drawings and watercolors and 40,000 prints giving a comprehensive history of British graphic art
- 35,000 rare books and manuscripts from the sixteenth century to the present, including the J.R. Abbey collection of “color-plate” books, sporting material, early maps and atlases, incunables, private press and contemporary artists’ books
- a reference library and archives with over 40,000 volumes supporting research in British art and related fields

After a sixteen-month building conservation project, the Center reopened in May 2016. The galleries have been reinstalled with a global outlook under the title *Britain in the World*. As noted by President Salovey, “the Center’s refurbishment exemplifies this spirit of community. The renovation has made the Center, as Provost Polak wrote, ‘more inviting and available to all.’ This includes the public at large, but also our students and faculty in concrete ways: the reconfigured spaces on the Center’s fourth floor, originally designed by Kahn to be study areas, will now fulfill that purpose, enabling scholars to request and examine up close many of the Center’s works not currently on display. The ripple effects of the renovation can be felt beyond the Center’s walls as well. Nearly all of the building’s old linen wall coverings were given to the School of Art or to community art programs. And the plywood and other materials used during the construction process were donated to Habitat for Humanity.”

Long Gallery following reinstallation, photography by Richard Caspole



Light *and* Truth

Carved into Sheffield-Sterling-Strathcona Hall

Photography by Michael Marsland, University Photographer

