Carnegie Mellon University

FINANCIAL REPORT 2017

CONTENTS

FACTS AND FIGURES

Type of University*
Private, coeducational, research, granting about 4,600 bachelor's, master's and doctoral degrees each year.

Colleges and Schools
College of Engineering
College of Fine Arts
Dietrich College of Humanities and Social Sciences
Heinz College of Information Systems and Public Policy
Mellon College of Science
School of Computer Science
Tepper School of Business

Number of Students*
6,574 undergraduates, 5,375 Master's and 1,870 doctoral students, and 142 non-degree students

Number of Employees*
5,701 total employees
696 tenure-stream faculty
686 non-tenure-stream faculty
4,319 staff

Number of Active Alumni
105,255+ alumni

Carnegie Mellon Faculty and Alumni Award Highlights:
- 20 Nobel Prize Laureates
- 56 Members, National Academy of Engineering
- 17 Members, National Academy of Sciences
- 114 Emmy Award Winners
- 44 Tony Award Winners
- 9 Academy Award Winners
- 5 Members, National Academy of Medicine
- 12 Turing Awards

Athletics
Team name is "The Tartans;" NCAA Division III classification; founding member of the University Athletic Association; 19 varsity sports ; over 25 club sports ; and over 40 intramural activities.

Computers
Carnegie Mellon is one of the most technologically sophisticated campuses in the world. When it introduced its "Andrew" computing network in the mid-1980s, it pioneered educational applications of technology. The "Wireless Andrew" system, developed in the mid-1990s, covers the majority of the 148-acre Pittsburgh campus.

History
Founded in 1900 by industrialist and philanthropist Andrew Carnegie as a technical school for working-class Pittsburgh; became Carnegie Institute of Technology in 1912; merged with the Mellon Institute in 1967 to become Carnegie Mellon University.

Physical Size
148-acre Pittsburgh campus; 115 campus-owned buildings; two branch campuses.

Location
Pittsburgh, Pennsylvania: Five miles east of downtown Pittsburgh, bordered by 500-acre Schenley Park and three culturally active residential neighborhoods.

Additional branch campuses:
Doha, Qatar, and Silicon Valley, California

Carnegie Mellon is expanding its international presence with many graduate programs and research partnerships across the globe.

For more information about Carnegie Mellon, please contact:

Office of Media Relations
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213-3890
Phone: 412-268-2900
www.cmu.edu
www.carnegiemellontoday.com

** Source: Factbook 2016-17, Vol. 31*

[1]http://www.cmu.edu/about/
[2]http://www.cmu.edu/assets/pdfs/cmufactsheet.pdf
[3]https://admission.enrollment.cmu.edu/pages/athletics
[4]https://admission.enrollment.cmu.edu/pages/athletics
[5]https://www.cmu.edu/news/stories/archives/2016/september/images/cmu_factsheet.pdf
[6]CDFD

REPORT OF

INDEPENDENT AUDITORS
AND CONSOLIDATED
FINANCIAL STATEMENTS

pwc

REPORT OF INDEPENDENT AUDITORS
TO THE BOARD OF TRUSTEES
CARNEGIE MELLON UNIVERSITY AND SUBSIDIARIES

We have audited the accompanying consolidated financial statements of Carnegie Mellon University and its subsidiaries (the "university"), which comprise the consolidated statements of financial position as of June 30, 2017 and June 30, 2016, and the related consolidated statements of activities and of cash flows for the years then ended.

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 audit 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 financial position of Carnegie Mellon University and its subsidiaries at June 30, 2017 and June 30, 2016, and the changes in their net assets and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

PricewaterhouseCoopers LLP

Pittsburgh, Pennsylvania
October 4, 2017

PricewaterhouseCoopers LLP, 600 Grant Street, Pittsburgh, PA 15219 T: 412.355.6000 | F: 412.355.8089
www.pwc.com/us

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

June 30, 2017 and 2016 ***(dollars in thousands)***

	2017	2016
Assets		
Cash and cash equivalents *(Note 2 and Note 19)*	$251,520	$913,250
Accrued interest and dividends	1,771	919
Accounts receivable, net *(Note 3)*	61,621	68,792
Pledges receivable, net *(Note 4)*	104,914	118,218
Student loans receivable, net *(Note 3)*	17,218	16,562
Investments *(Note 5 and Note 7)*	2,400,619	1,913,664
Assets held in trust by others *(Note 7)*	10,710	10,254
Prepaid expenses and other assets *(Note 2)*	50,804	48,710
Land, buildings and equipment, net *(Note 9)*	884,636	817,396
Total assets	**$3,783,813**	**$3,907,765**
Liabilities		
Accounts payable and other liabilities *(Note 2)*	$202,805	$198,354
Deferred revenue and settlement proceeds *(Note 19)*	106,409	857,455
Federal student loan funds	14,785	14,744
Present value of split interest agreements payable	13,512	13,854
Debt obligations *(Note 10)*	552,021	485,222
Total liabilities	$889,532	$1,569,629
Net assets		
Unrestricted	$1,275,211	$935,318
Temporarily restricted *(Note 11)*	807,491	690,265
Permanently restricted *(Note 11)*	811,579	712,553
Total net assets	$2,894,281	$2,338,136
Total liabilities and net assets	**$3,783,813**	**$3,907,765**

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

CONSOLIDATED STATEMENTS OF ACTIVITIES

Year ended June 30, 2017 ***(dollars in thousands)***

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue and other support				
Tuition and other educational fees revenue, net of financial aid	$510,438	$ -	$ -	$510,438
Sponsored projects revenue *(Note 8)*	376,901	-	-	376,901
Investment income *(Note 5)*	40,641	8,608	342	49,591
Contributions revenue *(Note 4)*	24,685	38,741	81,308	144,734
Auxiliary services revenue	62,040	-	-	62,040
Other sources *(Note 2)*	85,907	176	(296)	85,787
Net assets released from restrictions	74,700	(74,700)	-	-
Total revenue and other support	$1,175,312	$(27,175)	$81,354	$1,229,491
Expenses				
Salaries	$619,433	$ -	$ -	$619,433
Benefits	134,068	-	-	134,068
Supplies and services	160,710	-	-	160,710
Occupancy and related expenses	75,223	-	-	75,223
Other operating expenses	59,886	-	-	59,886
Depreciation and amortization	65,240	-	-	65,240
Interest expense	13,694	-	-	13,694
Total expenses	$1,128,254	$ -	$ -	$1,128,254
Increase (decrease) in net assets before nonoperating activities	$47,058	$(27,175)	$81,354	$101,237
Nonoperating activities				
Net realized/unrealized gains on investments *(Note 5)*	$35,595	$143,703	$1,789	$181,087
Other *(Note 2)*	276,762	(2,279)	-	274,483
Post-retirement plan changes other than net periodic benefit costs *(Note 15)*	(662)	-	-	(662)
Net assets released from restriction for capital	23	(23)	-	-
Reclassification *(Note 2)*	(18,883)	3,000	15,883	-
Total nonoperating activities	$292,835	$144,401	$17,672	$454,908
Increase (decrease) in net assets	$339,893	$117,226	$99,026	$556,145
Net assets				
Beginning of year	**$935,318**	**$690,265**	**$712,553**	**$2,338,136**
End of year	**$1,275,211**	**$807,491**	**$811,579**	**$2,894,281**

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

CONSOLIDATED STATEMENTS OF ACTIVITIES

Year ended June 30, 2016 ***(dollars in thousands)***

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue and other support				
Tuition and other educational fees revenue, net of financial aid	$482,365	$ -	$ -	$482,365
Sponsored projects revenue *(Note 8)*	384,538	-	-	384,538
Investment income *(Note 5)*	33,335	6,430	305	40,070
Contributions revenue *(Note 4)*	27,593	120,486	49,183	197,262
Auxiliary services revenue	59,967	-	-	59,967
Other sources *(Note 2)*	104,232	150	(353)	104,029
Net assets released from restrictions	63,670	(63,670)	-	-
Total revenue and other support	$1,155,700	$63,396	$49,135	$1,268,231
Expenses				
Salaries	$590,378	$ -	$ -	$590,378
Benefits	128,380	-	-	128,380
Supplies and services	162,254	-	-	162,254
Occupancy and related expenses	74,541	-	-	74,541
Other operating expenses	61,413	-	-	61,413
Depreciation and amortization	62,471	-	-	62,471
Interest expense	9,670	-	-	9,670
Total expenses	$1,089,107	$ -	$ -	$1,089,107
Increase in net assets before nonoperating activities	$66,593	$63,396	$49,135	$179,124
Nonoperating activities				
Net realized/unrealized (losses) on investments *(Note 5)*	$(33,585)	$(22,923)	$(418)	$(56,926)
Other *(Note 2)*	(2,342)	(2,070)	-	(4,412)
Post-retirement plan changes other than net periodic benefit costs *(Note 15)*	(3,123)	-	-	(3,123)
Net assets released from restriction for capital	48,201	(48,201)	-	-
Total nonoperating activities	$9,151	$(73,194)	$(418)	$(64,461)
Increase (decrease) in net assets	$75,744	$(9,798)	$48,717	$114,663
Net assets				
Beginning of year	**$859,574**	**$700,063**	**$663,836**	**$2,223,473**
End of year	**$935,318**	**$690,265**	**$712,553**	**$2,338,136**

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

CONSOLIDATED STATEMENTS OF CASH FLOWS

Year Ended June 30, 2017 and 2016
(dollars in thousands)

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

	2017	2016
Cash flows from operating activities		
Increase in net assets	$556,145	$114,663
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Realized and unrealized (gains) losses on investments	(208,788)	32,364
Depreciation and amortization	65,240	62,471
Amortization of bond premium	(2,288)	(2,358)
Gifts in kind	(384)	(113)
Loss on asset dispositions	152	944
Receipt of contributed securities	(10,975)	(10,384)
Provision for bad debt and other allowances	3,007	2,131
Contributions held in trust by others	(456)	387
Contributions for land, buildings, equipment and permanent endowment	(83,467)	(86,453)
Proceeds from sales of donated securities	1,269	5,878
(Increase) decrease in assets:		
Accrued interest and dividends	(852)	(58)
Accounts receivable, net	3,610	3,576
Pledges receivable, net	13,858	(42,095)
Other assets	3,528	(5,060)
Increase (decrease) in liabilities:		
Accounts payable and other liabilities	(6,801)	9,465
Pensions/post-retirement liability	2,064	3,807
Deferred revenue	(751,046)	741,598
Present value of split interest agreements	(342)	(447)
Net cash (used for) provided by operating activities	**$(416,526)**	**$830,316**
Cash flows from investing activities		
Proceeds from sale and maturity of investments	$1,324,447	$1,055,206
Purchases of investments	(1,602,614)	(1,143,049)
Unexpended bond proceeds	-	20,466
Purchases of land, buildings and equipment	(122,571)	(130,510)
Federal loan programs	41	121
Disbursements of loans to students	(3,865)	(2,612)
Repayments of loans from students	3,210	3,535
Net cash used for investing activities	**$(401,352)**	**$(196,843)**
Cash flows from financing activities		
Proceeds from issuance of indebtedness	$70,000	$ -
Repayments of debt obligations	(913)	(5,918)
Proceeds from sales of donated securities restricted for long-term purposes	3,594	10,072
Contributions for land, buildings, equipment and permanent endowment	83,467	86,453
Net cash provided by financing activities	**$156,148**	**$90,607**
Net (decrease) increase in cash and cash equivalents	**$(661,730)**	**$724,080**
Cash and cash equivalents at beginning of year	913,250	189,170
Cash and cash equivalents at end of year	**$251,520**	**$913,250**
Noncash transactions:		
Changes in accounts payable for land, buildings and equipment	$8,986	$1,658
Noncash stock contributions	$6,131	$19

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. CARNEGIE MELLON

Carnegie Mellon University ("Carnegie Mellon" or "the university") is a private, not-for-profit educational and research institution. Carnegie Mellon currently enrolls about 13,960 students and granted approximately 4,700 bachelor's, master's and doctoral degrees in the last academic year. Approximately 77% of undergraduate students are from the United States of America. International students comprise approximately 23% of undergraduate, 65% of master's and 57% of Ph.D. students.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting and Reporting

The accompanying consolidated financial statements have been prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America ("GAAP") and include the accounts of Carnegie Mellon and other majority-owned entities. The consolidated entities are Advanced Robotics for Manufacturing Institute ("ARM Institute"), Benjamin Garver Lamme Scholarship Fund, Jack G. Buncher Charitable Fund for Carnegie Mellon, iCarnegie, Inc., and Carnegie Innovations, LLC. All significant inter-entity transactions and balances have been eliminated in consolidation. Carnegie Mellon is a joint sponsor with the University of Pittsburgh in MPC Corporation ("MPC"), a beneficiary of The Dietrich Foundation, and an owner as a tenant in common of the Bellefield Boiler Plant. The activities of MPC, The Dietrich Foundation, and the Bellefield Boiler Plant are not consolidated or recorded in Carnegie Mellon's consolidated financial statements (see Note 16).

In January 2017, the U.S. Department of Defense awarded the ARM Institute, a nonprofit venture led by Carnegie Mellon, a contract to launch an advanced robotics manufacturing institute in Pittsburgh. The fiscal 2017 consolidated financial statements include approximately $1.7 million in revenue and related expenses from the ARM Institute.

Carnegie Mellon's net assets and revenue, expenses, gains and losses are classified based on the existence or absence of donor-imposed restrictions. Accordingly, net assets and changes therein are classified and reported as follows:

Unrestricted Net Assets

Net assets that are not subject to donor imposed stipulations.

Temporarily Restricted Net Assets

Net assets subject to specific donor imposed or legal stipulations that can be fulfilled by actions of Carnegie Mellon pursuant to those stipulations or that expire by the passage of time.

Permanently Restricted Net Assets

Net assets subject to donor imposed stipulations requiring the assets be maintained permanently. Generally, the donors of these assets permit Carnegie Mellon to use all or part of the income earned on the related investments for general or specific purposes.

Revenues are reported as increases in unrestricted net assets unless use of the related assets is limited by donor-imposed restrictions. Expenses are reported as decreases in unrestricted net assets. Gains and losses on investments and other assets or liabilities are reported as increases or decreases in unrestricted net assets unless their use is restricted by the donor or by law. Expiration or satisfaction of temporary restrictions on net assets are reported as net assets released from restrictions.

Income and net gains and losses on investments are reported as follows:

- As changes in permanently restricted net assets, if so restricted by donor;
- As changes in temporarily restricted net assets, if the terms of the gift or relevant state law impose restrictions on the use of the income or gains and losses; and
- As changes in unrestricted net assets, in all other cases.

Reclassifications

Certain prior year amounts have been reclassified to conform with the current year's presentation.

Cash Equivalents

Cash equivalents include highly liquid investments with original maturities of three months or less when purchased. Cash equivalents are recorded at cost which approximates fair value. These balances are held at the unversity's custodians, prime brokers, clearing agents and banking institutions for investment and working capital purposes.

Investments

Debt and equity securities held by Carnegie Mellon are carried at fair value as established by the major securities markets with gains and losses reported in the Consolidated Statements of Activities. The alternative investments are carried at estimated fair value. Carnegie Mellon reviews and evaluates the values provided by the investment managers and agrees with valuation methods and assumptions used in determining the fair value of the alternative investments. Those estimated fair values may differ significantly from the values that would have been used had a ready market for these securities existed. Note 7- Fair Value provides additional information about inputs used to determine fair value for investments. Investments received as a gift are reflected as contributions at their fair value at the date of the gift.

Investment securities, in general, are exposed to various risks, such as interest rate, credit and overall market volatility. Due to the level of risk associated with certain investment securities, changes could materially affect the amounts reported in the Consolidated Statements of Financial Position.

Endowment

Investment policy for endowment assets is the responsibility of the Investment Committee of the Board of Trustees. Substantially all endowment assets are managed by outside investment managers and are held by an outside custodian.

Unrestricted endowment net assets include Carnegie Mellon funds, unrestricted gifts from donors, and any accumulated income and appreciation thereon, which is intended to remain in the endowment for the long-term support of Carnegie Mellon activities, but may be expended under trustee authorization. Also included is interest and dividend income on permanently restricted endowment assets where the distribution is unrestricted.

Temporarily restricted endowment net assets include cumulative gains and losses on permanent endowment assets and cumulative interest and dividend income on permanent endowment assets where the distribution/spending is restricted by the donor. The trustees of Carnegie Mellon must annually authorize release of endowment gains according to Pennsylvania law. This classification also includes term endowments and endowment gifts whereby the donor permits distributions of the principal amount of the gift and accumulated appreciation.

Permanently restricted endowment net assets include contributions, contributed stock gains and losses, and donor stipulated income and appreciation that must be invested in perpetuity to provide a permanent source of income.

All endowment funds participate in a Carnegie Mellon investment pool. The investment pool provides income to its respective participants. Such income is used for the specific purpose prescribed by the donor or, if the purpose was not prescribed by the donor, the income is deemed to be unrestricted and used for general purposes. New endowment funds or additions to existing funds are assigned shares in the investment pool based upon the per share market value at the end of the previous month. Income distributions from the investment pool are based upon the number of shares held by each participant and the approved spending rate (see Note 6). Income distributions from the investment pool are based upon the "total return concept." The annual income distributed from the investment pool includes interest and dividends and could include a portion of the accumulated capital gains. Any capital gains not distributed currently are reinvested in the investment pool and are available for distribution from the endowment assets in future years.

Assets Held in Trust by Others

Assets held in trust by others include the value of Carnegie Mellon's beneficial interest in perpetual trusts and irrevocable trusts held by outside trustees. The present value of the perpetual trusts' estimated future cash receipts, which are measured by the fair value of the assets contributed to the trust, are recognized as assets and contribution revenues at the dates the trusts are established. The assets are adjusted periodically for changes in market values.

Various donors have established irrevocable trusts whereby Carnegie Mellon holds a remainder interest in the trust or is entitled to distributions over the life of the trusts. The present value of the portion of the trusts estimated to be distributable to Carnegie Mellon over the life of the trusts or upon the termination of the trusts are recorded as assets and contribution revenues at the dates the trusts are established. The assets are adjusted periodically for changes in market value.

Prepaid Expenses and Other Assets

Prepaid expenses represent items such as prepaid insurance, prepaid rentals and other contractual payments made in advance of their use or consumption. Amounts are expensed and amortized over the periods to which the charges relate.

Other assets include debt issuance costs, deferred compensation plan assets, swap assets and other costs incurred that will result in benefits to future periods.

Land, Buildings and Equipment

Land, buildings and equipment are recorded at cost at the date of acquisition or, if acquired by gift, at the estimated fair value as of the date of the gift. Additions to plant assets are capitalized while scheduled maintenance and minor renovations are expensed to operations. Buildings and equipment are reflected net of accumulated depreciation, which is calculated on a straight-line basis over the estimated useful lives. Carnegie Mellon capitalizes interest during periods of construction. Carnegie Mellon reviews its land, buildings, equipment and other long-lived assets for impairment whenever events or circumstances indicate that the carrying amount may not be recoverable. Useful lives are as follows:

Buildings 35-50 years
Renovations 20 years
Land improvements 15 years
Movable assets 5-20 years

Donated works of art, historical treasures and similar assets have been recognized at their estimated fair value based upon appraisals or similar valuations at the date of acquisition or donation. If purchased, the assets are recognized at cost. The assets are depreciated over 99 years.

Accounts Payable and Other Liabilities

Accounts payable and other liabilities include accounts payable, accrued payroll and benefits, swap liabilities and other accrued expenses.

Federal Student Loan Funds

This liability represents Perkins loan funds provided to students by the federal government through Carnegie Mellon. Carnegie Mellon is required to collect the loans on behalf of the federal government. The amount due from the students is reported in the Consolidated Statements of Financial Position as a component of student loans receivable, net.

Present Value of Split Interest Agreements Payable

Carnegie Mellon's split interest agreements with donors consist primarily of gift annuities, unitrusts, lead trusts, charitable remainder annuity trusts and life income agreements. Assets held under these agreements are included in investments. Generally, contribution revenues are recognized at the dates the agreements are established, after recording liabilities for the present value of the estimated future payments to be made to the beneficiaries. The liabilities are adjusted during the term of the trusts for changes in the value of the assets, accretion of the discount and other changes in the estimates of future benefits. The discount rates utilized for split interest agreements range from 1.2% to 6.2%. Distributions from the trusts are recorded in accordance with the donor's stipulations as contributions and the carrying value of the assets are adjusted for changes in the fair value of the trust assets.

Operating Activities

Carnegie Mellon's measure of unrestricted operations as presented in the Consolidated Statements of Activities includes revenue from tuition and other educational fees, sponsored projects, investment return distributed according to Carnegie Mellon's spending policy, unrestricted contributions, revenues from auxiliary services and other sources, and net assets released from restriction. Operating expenses are reported by natural classification.

Tuition and Other Educational Fees Revenue, Net of Financial Aid

Revenues from tuition and other educational fees are reported in the fiscal year in which they are earned, including pro-rata adjustments for educational programs crossing over fiscal years. Tuition and other educational fees are reported net of student financial aid. Student financial aid amounted to $144.3 million and $131.8 million for the years ended June 30, 2017 and 2016, respectively. Student receivables are not collateralized; however, credit risk is minimized as a result of the diverse nature of the university's student base. The university establishes an allowance for doubtful accounts based on historical trends and other information.

Sponsored Projects Revenue

Sponsored projects revenue includes research and other programs sponsored by government, industrial and other sources. Direct sponsored projects revenue represents reimbursement of costs incurred in direct support of sponsored projects. Such revenue is recognized when the direct costs are incurred. In addition, sponsored projects normally provide for the recovery of indirect costs supporting the project. Indirect sponsored projects revenue is recorded at rates established in advance by Carnegie Mellon through negotiations with the United States government and other sponsors. Amounts received from sponsors under agreements that require the exchange of assets, rights or other privileges between Carnegie Mellon and the sponsor are recorded as deferred revenue until the contract terms are fulfilled. For the years ended June 30, 2017 and 2016, respectively, 55% and 52% of sponsored projects revenue is generated from two federal agencies.

Contributions Revenue

Contributions include gifts, grants and unconditional promises to give that are recognized as revenues in the period such commitments are received. Conditional promises to give are recognized when the conditions on which they depend are substantially met. Unconditional promises to give to be received in future years are discounted, as of the date of the gift, at a rate commensurate with the pledge payment schedule. A discount rate commensurate with fair value is used. An allowance is estimated for uncollectible contributions based upon historical patterns and any known uncollectible accounts or accounts in arrears.

Contributions with Restrictions Met in the Same Year

Contributions received with donor-imposed restrictions that are met in the same year as received are reported as revenues of the temporarily restricted net asset class, and a release of restriction is made to unrestricted net assets to reflect the satisfaction or expiration of such restrictions.

Capital Contributions

Donors' contributions to fund construction projects are classified as temporarily restricted net assets and are released from restriction through nonoperating activities when the facility is placed in service. $0.1 million and $48.2 million of capital contributions were released from restriction during fiscal years 2017 and 2016, respectively, and were reclassified from temporarily to unrestricted net assets through nonoperating activities.

Contributions received after the asset is placed in service are classified as temporarily restricted net assets and are released from restriction through operating activities in the same fiscal year. $7.6 million and $0.3 million of capital contributions were released from restriction during fiscal years 2017 and 2016, respectively, and were reclassified from temporarily to unrestricted net assets through operating activities.

Auxiliary Services Revenue

Carnegie Mellon's auxiliaries exist primarily to furnish goods and services to students, faculty and staff. Managed as essentially self-supporting activities, Carnegie Mellon's auxiliaries consist principally of housing services, dining services, telecommunications, parking, printing and publications, retail and other external services. Auxiliary revenues and expenses are reported as changes in unrestricted net assets.

Other Sources

Other sources revenues are comprised of funding received for Carnegie Mellon's international locations, royalty income, licensing revenue, affiliate/membership revenue and other miscellaneous revenues.

Nonoperating Activities

Nonoperating activities — other presented in the Consolidated Statements of Activities include:

- Gain in the fair value of the interest rate swap agreements of $13.0 million for the fiscal year ended June 30, 2017, and loss in the fair value of the interest rate swap agreements of $10.0 million for the fiscal year ended June 30, 2016 (Note 12);
- Swap interest expense of $5.3 million and $5.6 million for the fiscal years ended June 30, 2017 and 2016, respectively (Note 12);
- Loss from Carnegie Innovations, LLC subsidiaries of $1.5 million for the fiscal year ended June 30, 2017 and gains from Carnegie Innovations, LLC subsidiaries of $18.0 million for the fiscal year ended June 30, 2016, which include gains recognized upon the sale of certain subsidiaries;
- Loss on adjustment of pledges receivable of $2.4 million and $2.1 million for the fiscal years ended June 30, 2017 and 2016, respectively;

- Other losses of $0.3 million and $4.7 million for the fiscal years ended June 30, 2017 and June 30, 2016, respectively;
- Gain of $270.9 million on Marvell Litigation Settlement (Note 19);

Reclassification of $15.9 million to permanently restricted net assets and $3.0 million to temporarily restricted net assets from unrestricted net assets due to donor-imposed stipulations on a contribution for the fiscal year ended June 30, 2017.

Income Taxes

Carnegie Mellon is a nonprofit organization as described in Section 501(c)(3) of the Internal Revenue Code (the "Code") and is generally exempt from income taxes on related income pursuant to Section 501(a) of the Code.

The university accounts for uncertainties in income taxes in accordance with authoritative guidance, which prescribes a recognition threshold of more-likely-than-not to be sustained upon examination by the appropriate taxing authority. Measurement of the tax uncertainty occurs if the recognition threshold has been met. Management determined there were no tax uncertainties that met the recognition threshold at June 30, 2017 and 2016.

The university's federal Exempt Organization Business Income Tax Returns remain subject to examination by the Internal Revenue Service for the years subsequent to June 30, 2013.

The university's policy is to recognize interest related to unrecognized tax benefits in interest expense and penalties in operating expenses.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported consolidated financial statements and related accompanying footnote disclosures. Actual results could differ from those estimates and these differences could be material. Carnegie Mellon's significant estimates include: allowance for doubtful accounts, asset retirement obligations, legal contingencies, accrued post-retirement liability and valuation of investments.

Recent Accounting Pronouncements

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*. This standard implements a single framework for recognition of all revenue earned from customers. This framework ensures that entities appropriately reflect the consideration to which they expect to be entitled in exchange for goods and services by allocating transaction price to identified performance obligations and recognizing revenue as performance obligations are satisfied. Qualitative and quantitative disclosures are required to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. The standard is effective for fiscal years beginning after December 15, 2017. The university is evaluating the impact this will have on the consolidated financial statements beginning in fiscal year 2019.

In April 2015, the FASB issued ASU 2015-03, *Imputation of Interest: Simplifying the Presentation of Debt Issuance Costs*. This standard requires all costs incurred to issue debt to be presented in the balance sheet as a direct deduction from the carrying value of the associated debt liability. The standard is effective for fiscal years beginning after December 15, 2016. The university is evaluating the impact this will have on the consolidated financial statements beginning in fiscal year 2018.

In January 2016, the FASB issued ASU 2016-1, *Financial Instruments- Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*. ASU 2016-1 addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The standard is effective for fiscal years beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. The guidance allows early adoption of certain provisions of the standard that eliminate the requirement to disclose the fair value of financial instruments measured at cost. However, adoption of the other provisions is not permitted earlier than for fiscal years beginning after December 15, 2017. Carnegie Mellon adopted the provisions of the standard that eliminate the requirement to disclose the fair value of financial instruments measured at cost for the fiscal year ended June 30, 2016 and is evaluating the impact the other provisions of the standard will have on the consolidated financial statements beginning in fiscal year 2020.

In February 2016, the FASB issued ASU 2016-2, *Leases (Topic 842)*. The main difference between previous GAAP and Topic 842 is the recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous GAAP. The guidance 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 standard is effective for fiscal years beginning after December 15, 2018, and should be applied on a modified retrospective basis in the year it is first applied. Carnegie Mellon is evaluating the impact the adoption of this standard will have on the consolidated financial statements beginning in fiscal year 2020.

In August 2016, the FASB issued ASU 2016-14, *Not-for-Profit Entities (Topic 958): Presentation of Financial Statements of Not-for-Profit Entities*. This guidance replaces the three existing classes of net assets for not-for-profit entities with two classes, net assets with donor restrictions and net assets without donor restrictions. The guidance also requires enhanced disclosures about governing board designations and appropriations, composition of net assets with donor restrictions and other qualitative and quantitative information regarding liquid resources and the availability of financial assets. The standard is effective for annual financial statements issued for fiscal years beginning after December 15, 2017. Early adoption is permitted, and the standard is required to be applied on a retrospective basis in the year of adoption. Carnegie Mellon is evaluating the impact the adoption of this standard will have on the consolidated financial statements beginning in fiscal year 2019.

3. ACCOUNTS AND STUDENT LOANS RECEIVABLE

Accounts Receivable

Accounts receivable at June 30, 2017 and 2016, consist of the following *(dollars in thousands):*

	2017	2016
Sponsored project grants and contracts		
Federal	$34,079	$43,066
Other	8,055	6,686
Total sponsored projects and contracts	$42,134	$49,752
Student accounts	4,248	4,009
Other	21,014	17,838
Total student accounts and other	$25,262	$21,847
Allowance for doubtful accounts	(5,775)	(2,807)
Net accounts receivable	$61,621	$68,792

Other accounts receivable consists primarily of Carnegie Mellon's international programs, affiliate and membership agreements, license agreements and other miscellaneous revenue sources.

Student Loans Receivable

Net student loans receivable of approximately $17.2 million and $16.6 million, as of June 30, 2017 and 2016, respectively, primarily represent student loans made under the Perkins federal loan program. These loans are reported net of an allowance for doubtful accounts of approximately $0.5 million as of June 30, 2017 and 2016, respectively.

4. PLEDGES RECEIVABLE AND CONTRIBUTIONS

Pledges receivable as of June 30, 2017 and 2016 are due as follows *(dollars in thousands):*

	Temporarily Restricted	Permanently Restricted	Total
2017			
In one year or less	$24,325	$4,510	$28,835
Between one year and five years	33,353	35,554	68,907
More than five years	11,314	7,672	18,986
Pledges receivable, gross	$68,992	$47,736	$116,728
Unamortized discount	(3,615)	(3,828)	(7,443)
Allowance for unfulfilled pledges	(2,615)	(1,756)	(4,371)
Pledges receivable, net of discount and allowance	**$62,762**	**$42,152**	**$104,914**

	Temporarily Restricted	Permanently Restricted	Total
2016			
In one year or less	$19,395	$3,676	$23,071
Between one year and five years	57,242	36,238	93,480
More than five years	12,203	3,056	15,259
Pledges receivable, gross	$88,840	$42,970	$131,810
Unamortized discount	(4,875)	(3,791)	(8,666)
Allowance for unfulfilled pledges	(3,359)	(1,567)	(4,926)
Pledges receivable, net of discount and allowance	**$80,606**	**$37,612**	**$118,218**

Contributions revenue includes gifts, grants and unconditional promises to give and is recorded in the appropriate net asset category based upon donor stipulations. Contributions for the fiscal years ended June 30, 2017 and 2016 are as follows *(dollars in thousands):*

	2017	2016
Unrestricted	$24,685	$27,593
Temporarily restricted	38,741	120,486
Permanently restricted	81,308	49,183
Total	**$144,734**	**$197,262**

Conditional promises to give, which depend on the occurrence of a specified future and uncertain event, such as matching gifts from other donors, are recognized as contributions revenue when the conditions are substantially met. Total conditional pledges for Carnegie Mellon were approximately $42.6 million and $39.9 million as of June 30, 2017 and 2016, respectively, primarily related to raising matching funds and meeting enrollment and construction milestones related to the David A. Tepper Quadrangle, as well as a foundation grant with contingencies specified in the grant agreement. These amounts were not recognized as contributions revenue during the respective fiscal year as the conditions had not been met.

5. INVESTMENTS

Investments by major category at June 30, 2017 and 2016 are as follows *(dollars in thousands):*

	2017	2016
Cash equivalents	$83,582	$64,603
Short term investments with maturities less than one year	101,725	89,780
Fixed income	233,618	232,387
Short term fixed income investments	189,939	154,942
Equity investments	893,419	530,859
Alternative investments	898,336	841,093
Total investments	**$2,400,619**	**$1,913,664**

Investments are held for the following purposes *(dollars in thousands):*

	2017	2016
Endowment	$1,718,582	$1,288,197
Reserves for working capital and plant - short term	322,320	291,740
Reserves for working capital and plant - long term	304,567	277,818
Split interest agreements	22,081	22,729
Other investments	33,069	33,180
Total investments	**$2,400,619**	**$1,913,664**

Nearly all fixed-income securities are United States Treasury and Agency obligations, investment grade corporates and asset backed securities. Equity investments at June 30, 2017 are composed of approximately 46.3% domestic equities and 53.7% international and emerging market equities. Equity investments at June 30, 2016 were composed of approximately 51.7% domestic equities and 48.3% international and emerging market equities. Alternative investments are largely investments in buyout funds, venture capital, real estate, natural resources and hedge funds.

The allocation to each major category in the previous table represents the actual allocation of the short term and long-term investment pools, split interest agreements and other miscellaneous investments on a combined basis. Each investment pool maintains a unique investment strategy. Actual allocations on a combined basis should not be interpreted as an investment allocation policy for a particular investment pool. In addition, the asset category allocations do not reflect the effective allocation exposures resulting from investment strategies that include derivatives.

The following schedule summarizes the investment return for the fiscal years ended June 30, 2017 and 2016 *(dollars in thousands):*

	2017	2016
Dividends and interest (net of $5.9 million and $5.4 million of investment fees)	$21,890	$15,508
Net realized gains on sale of investments	91,128	72,172
Net unrealized gains/(losses) on investments	117,660	(104,536)
Total return on investments	**$230,678**	**$(16,856)**

Operating investment income as reported in the Consolidated Statements of Activities includes dividends and interest earned on unrestricted funds as well as unrestricted accumulated gains utilized for current operations in the amounts of $27.7 million and $24.6 million for the years ended June 30, 2017 and 2016, respectively. The accumulated gains are reclassified from net realized gains to dividends and interest income. This reclassification is not reflected in the table above.

Certain of Carnegie Mellon's outside investment managers, including alternative asset managers, are authorized and do, in fact, purchase and sell derivative instruments in order to manage interest rate risks, foreign currency fluctuations and other market positions.

Carnegie Mellon's long-term investments pool is comprised of U.S. domestic and international portfolios. For performance evaluation and risk control purposes, international portfolios are unhedged with respect to foreign currencies. Unhedged benchmarks reflect the full impact of foreign currency fluctuations stemming from the benchmarks' foreign currency positions. Investment managers of these international portfolios have the discretion to, and certain do in fact, manage foreign currencies through foreign exchange contracts to protect the portfolios from potential foreign currency losses and to benefit from potential gains. Carnegie Mellon's investment managers understand that they are assuming active management risks to the extent that they assume foreign currency exposures that differ from the foreign currency exposures in their relevant market benchmarks (as documented in the formal investment guidelines for each manager).

Gains or losses from derivative instruments are reported as realized and unrealized gains or losses in the Consolidated Statements of Activities. The fair value of all derivative instruments is included in the fair value of the investments.

Under the terms of certain limited partnership agreements, Carnegie Mellon is obligated to periodically advance additional funding for venture capital, buyout, real estate and natural resources fund investments. At June 30, 2017 and 2016, Carnegie Mellon had unfunded commitments of approximately $433.5 million and $377.0 million, respectively, for which capital calls had not been exercised. Such commitments generally have fixed expiration dates or other termination clauses. Carnegie Mellon maintains sufficient liquidity in its investment portfolio to cover such calls.

Alternative investments are less liquid than Carnegie Mellon's other investments. The following tables summarize these investments by strategy type at June 30, 2017 and 2016 *(dollars in thousands):*

Alternative Investment Strategy	2017 Number of Funds	Fair Value
Hedge funds	19	$213,883
Natural resources	24	122,144
Private equity (buyout) funds	50	123,481
Real estate	19	70,162
Venture capital	125	343,753
Other	15	24,913
Total	**252**	**$898,336**
Total investments		**$2,400,619**

Alternative Investment Strategy	2016 Number of Funds	Fair Value
Hedge funds	20	$180,381
Natural resources	25	99,232
Private equity (buyout) funds	50	133,747
Real estate	20	75,271
Venture capital	117	327,288
Other	15	25,174
Total	**247**	**$841,093**
Total investments		**$1,913,644**

6. ENDOWMENTS

The following tables provide a summary of the changes in value of the endowment net assets excluding pledges for the years ended June 30 *(dollars in thousands):*

2017	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	$220,207	$426,091	$659,465	$1,305,763
Gifts and other additions				
Contributions (excluding pledges) and changes in donor restrictions	61	2	76,735	76,798
Other	200,000	-	15,883	215,883[1]
Terminated life income trusts, income and gains reinvested	-	-	1,631	1,631
Total gifts and other additions	$200,061	$2	$94,249	$294,312
Investment income				
Interest and dividends	$5,916	$7,760	$107	$13,783
Net realized gains on sale of securities	12,680	62,087	420	75,187
Net unrealized losses	17,401	80,882	-	98,283
Total investment income	$35,997	$150,729	$527	$187,253
Income distributed				
Cash and accrued interest and dividends	$(5,916)	$(7,760)	$(107)	$(13,783)
Accumulated realized investment gains	(23,119)	(30,327)	(420)	(53,866)
Total income distributed	$(29,035)	$(38,087)	$(527)	$(67,649)
Endowment net assets, end of year	**$427,230**	**$538,735**	**$753,714**	**$1,719,679[2]**

(1) Includes $200.0 million from the Marvell settlement net proceeds (Note 19) designated by the board and $15.9 million in reclassifications due to donor imposed stipulations (Note 2).

(2) Includes $1.1 million of endowment gifts and other transfers pending investment and other accruals.

2016	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	$246,137	$477,454	$614,633	$1,338,224
Gifts and other additions				
Contributions (excluding pledges) and changes in donor restrictions	11	1	44,301	44,313
Terminated life income trusts, income and gains reinvested	-	-	531	531
Total gifts and other additions	$11	$1	$44,832	$44,844
Investment income				
Interest and dividends	$4,062	$5,590	$36	$9,688
Net realized gains on sale of securities	10,643	47,037	186	57,866
Net unrealized losses	(15,779)	(69,769)	-	(85,548)
Total investment income	$(1,074)	$(17,142)	$222	$(17,994)
Income distributed				
Cash and accrued interest and dividends	$(4,070)	$(5,601)	$(36)	$(9,707)
Accumulated realized investment gains	(20,797)	(28,621)	(186)	(49,604)
Total income distributed	$(24,867)	$(34,222)	$(222)	$(59,311)
Endowment net assets, end of year	**$220,207**	**$426,091**	**$659,465**	**$1,305,763**[3]

[3]Includes $17.6 million of endowment gifts and other transfers pending investment and other accruals.

The following tables outline the endowment net asset composition by type of fund for fiscal years 2017 and 2016 *(dollars in thousands):*

2017	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor-restricted endowment funds	$ -	$538,735	$735,714	$1,292,449
Board-designated funds	427,230	-	-	427,230
Total funds	**$427,230**	**$538,735**	**$735,714**	**$1,719,679**

2016	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor-restricted endowment funds	$ -	$426,091	$659,465	$1,085,556
Board-designated funds	220,207	-	-	220,207
Total funds	**$220,207**	**$426,091**	**$659,465**	**$1,305,763**

Unless the donor specifies that only a certain amount of the endowment may be spent, Pennsylvania Act 141 allows organizations to choose a total return spending policy strategy, whereby the board of trustees may annually elect to spend between 2% and 7% of the fair market value of the endowment. Carnegie Mellon maintains a total return spending policy. Endowment income distributions can consist of dividend and interest income and a withdrawal of accumulated capital gains, when necessary. The main objective of the total return spending policy is to separate spending policy from investment policy. This approach permits asset allocation decisions to be made independently of the need for current income. Carnegie Mellon targets a diversified asset allocation to achieve its long-term objectives with prudent risk constraints. The endowment spending rate is determined annually pursuant to a smoothing formula whereby an approved spending rate percentage is applied to the trailing thirty-six month average of endowment market values at December 31. For fiscal years 2017 and 2016, the approved spending rate was set at 5.0%. As a result of the spending rate formula, the effective spending rate (defined as the endowment draw totals for the fiscal years ended 2017 and 2016 divided by the June 30 endowment market values for the those fiscal years) was 4% and 4.5% respectively.

7. FAIR VALUE

Accounting Standards Codification Topic 820, Fair Value Measurement, establishes a hierarchy to prioritize valuation inputs based on the extent to which the inputs are observable in the marketplace. Observable inputs reflect market data obtained from sources independent of the reporting entity and unobservable inputs reflect the entities own assumptions about how market participants would value an asset or liability based on the best information available.

The following is a description of the university's valuation methodologies for assets and liabilities measured at fair value:

Level 1

Based upon quoted prices in active markets that the university has the ability to access for identical assets and liabilities. Market price data is generally obtained from exchange or dealer markets. The university does not adjust the quoted price for such assets and liabilities, which include active listed equities, mutual funds, government supported obligations and cash equivalents.

Level 2

Based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active or assets subject to transfer restrictions. Inputs are obtained from various sources including market participants, dealers and brokers.

Level 3

Based on valuation techniques that use significant inputs that are unobservable as they trade infrequently or not at all.

The following tables present the financial instruments carried at fair value for fiscal years 2017 and 2016 by caption in the Consolidated Statements of Financial Position by the valuation hierarchy previously defined *(dollars in thousands).*

2017	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Fair Value
Assets				
Deferred compensation plan assets	$8,648	$5,441	$2,124	$16,213
Investments				
Cash equivalents [a]	$61,752	$21,830	$ -	$83,582
Other short term investments with maturity of less than 1 year [b]		101,725	-	101,725
Equity Investments				
U.S. - equity funds and common stocks	348,184	-	5,290	353,474
Mutual funds - international developed	2,413	-	-	2,413
Mutual funds - international emerging	197,097	-	-	197,097
Short term fixed income investments	-	189,939	-	189,939
Fixed income funds and securities [a]	233,456	162	-	233,618
	$842,902	$313,656	$5,290	$1,161,848
Investments measured under the NAV practical expedient [c]				$1,238,771
Total investments				**$2,400,619**
Beneficial interests held by third party	$ -	$ -	$2,661	$2,661
Perpetual trusts held by third party	-	-	8,049	8,049
Total assets held in trust by others	$ -	$ -	$10,710	$10,710
Interest rate swap receivable	-	730	-	730
Total assets at fair value	**$851,550**	**$319,827**	**$18,124**	**$2,428,272**
Liabilities				
Interest rate swaps payable	-	31,876	-	31,876
Total liabilities at fair value	**$ -**	**$31,876**	**$ -**	**$31,876**

There were no significant transfers between Level 1 and Level 2 for the fiscal year ended 2017.

(a) Presentation as a single class is appropriate based on the nature and risks of these investments.

(b) Other short term investments with maturity of less than 1 year include highly liquid commercial paper. This commercial paper has original maturities between 90 and 270 days when purchased, but their maturities as of June 30, 2017 are typically within 90 days and the investments are readily convertible to cash.

(c) In accordance with ASC Subtopic 820-10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the Consolidated Statements of Financial Position. This includes commingled funds of $340.4 million, and hedge and private equity funds of $893.3 million as of June 30, 2017.

2016	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Fair Value
Assets				
Deferred compensation plan assets	$7,397	$4,952	$1,559	$13,908
Investments				
Cash equivalents [a]	$37,725	$26,878	$ -	$64,603
Other short term investments with maturity of less than 1 year [b]		89,780	-	89,780
Equity Investments				
U.S. - equity funds and common stocks	220,467	-	4,980	225,447
Mutual funds - international developed	2,255	-	-	2,255
Mutual funds - international emerging	94,760	-	-	94,760
Short term fixed income investments	-	154,942	-	154,942
Fixed income funds and securities [a]	232,201	186	-	232,387
	$587,408	$271,786	$4,980	$864,174
Investments measured under the NAV practical expedient [c]				$1,049,490
Total investments				**$1,913,664**
Beneficial interests held by third party	$ -	$ -	$2,612	$2,612
Perpetual trusts held by third party	-	-	7,642	7,642
Total assets held in trust by others	$ -	$ -	$10,254	$10,254
Interest rate swap receivable	-	2,791	-	2,791
Total assets at fair value	**$594,805**	**$279,529**	**$16,793**	**$1,940,617**
Liabilities				
Interest rate swaps payable	-	46,966	-	46,966
Total liabilities at fair value	**$ -**	**$46,966**	**$ -**	**$46,966**

(a) Presentation as a single class is appropriate based on the nature and risks of these investments.

(b) Other short term investments with maturity of less than 1 year include highly liquid commercial paper. This commercial paper has original maturities between 90 and 270 days when purchased, but their maturities as of June 30, 2016 are typically within 90 days and the investments are readily convertible to cash.

(c) In accordance with ASC Subtopic 820-10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the Consolidated Statements of Financial Position. This includes commingled funds of $208.4 million, and hedge and private equity funds of $841.1 million as of June 30, 2016.

As a practical expedient, the university is permitted under the authoritative guidance on fair value measurements to estimate fair value of an investment at the measurement date using the reported NAV without further adjustment unless the entity expects to sell the investment at a value other than NAV or if the NAV is not calculated in accordance with GAAP. Investments measured under the net asset value practical expedient primarily consist of the university's ownership in alternative investments (principally limited partnership interests in private equity, real estate, natural resources and hedge funds) and certain investments in fixed income (including comingled funds).

The fair values of the securities held by limited partnerships that do not have readily determinable fair values are determined by the general partner and are based on appraisals or other estimates that require varying degrees of judgment. If no public market exists for the investment securities, the fair value is determined by the general partner taking into consideration, among other things, the cost of the securities, prices of recent significant placements of securities of the same issuer, completed or pending third party transactions in comparable issues, recapitalizations and other transactions across the capital structure and subsequent developments concerning the companies to which the securities relate. The university has well established controls surrounding investment valuation and has performed due diligence regarding these investments to ensure NAV is an appropriate measure of fair value as of June 30. Management's internal controls surrounding the review of third party provided NAV include frequent communication with fund managers, review of audited financial statements and fund valuation policies, and continuous monitoring of existing investments.

Deferred compensation plan assets are valued using market quotations or prices obtained from independent pricing services (Level 1), market quotations or prices obtained from independent pricing sources who may employ various pricing methods (Level 2), and at contract value (Level 3).

Beneficial remainder and lead trusts held by third parties are valued at the present value of the future distributions expected to be received upon termination of the trust or over the term of the trust agreement and approximate fair value. Perpetual trusts are valued based upon the university's percentage interest in the fair value of the underlying trust assets.

Interest rate swaps are valued using observable inputs, such as quotations received from the counterparty, dealers or brokers, whenever available and considered reliable. In instances where models are used, the value of the interest rate swap depends upon the contractual terms of, and specific risks inherent in, the instrument as well as the availability and reliability of observable inputs. Such inputs include market prices for reference securities, yield curves, credit curves, measures of volatility, prepayment rates, assumptions for nonperformance risk and correlations of such inputs. The interest rate swap arrangements have inputs that can generally be corroborated by market data and are therefore classified within Level 2.

The valuation methods described above may produce fair value calculations that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the university believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date which could be material.

The following table clarifies the nature and risk of the university's investments and liquidity for financial instruments measured under the NAV practical expedient as of June 30, 2017 *(dollars in thousands):*

	Fair Value	Unfunded Commitments	Redemption Frequency [a]	Redemption Notice Period [a]
Commingled funds	$340,435	$ -	Semi-monthly and Monthly	2–30 days
Hedge funds			Semi-annual	
Absolute return strategies	83,212	-	and Annually	30-90 days
Directional return strategies	130,671	-		
Natural resources	122,144	40,530		
Private equity and venture capital	467,234	277,650		
Real estate	70,162	90,662		
Other	24,913	24,652		
Total investments	**$1,238,771**	**$433,494**		

The following table clarifies the nature and risk of the university's investments and liquidity for financial instruments measured under the NAV practical expedient as of June 30, 2016 *(dollars in thousands):*

	Fair Value	Unfunded Commitments	Redemption Frequency [a]	Redemption Notice Period [a]
Commingled funds	$208,397	$ -	Semi-monthly and Monthly	2–30 days
Hedge funds			Semi-annual	
Absolute return strategies	72,365	-	and Annually	30-90 days
Directional return strategies	108,016	-		
Natural resources	99,232	55,282		
Private equity and venture capital	461,035	241,363		
Real estate	75,271	56,306		
Other	25,174	24,003		
Total investments	**$1,049,490**	**$376,954**		

(a) Commingled and hedge fund investments held by the university may be subject to restrictions related to the initial investment that limits the university's ability to redeem capital from such investments during a specified period of time subsequent to the university's investment of capital in such funds, typically known as a lock-up period. Capital available for redemption after the lock-up period has expired may also be subject to limits that restrict the available redemption period to semi-monthly, monthly, quarterly, semi-annually or annually, and require 2-90 days prior written notice, potentially limiting the university's ability to respond quickly to changes in market conditions. All commingled funds have passed the lock-up period as of June 30, 2017.

Natural resources, private equity, and real estate alternative investments, cannot be redeemed upon request. Instead, the nature of these investments is that distributions are received through the liquidation of the underlying assets of the fund. It is estimated that the underlying assets of these funds would be liquidated over approximately four to eight years.

The following table includes a roll forward of the Consolidated Statements of Financial Position amounts for financial instruments classified by the university within Level 3 of the fair value hierarchy *(dollars in thousands):*

	Deferred Compensation	Common Stock	Trusts Held by Others	Total
Fair value, July 1, 2016	$1,559	$4,980	$10,254	$16,793
Unrealized gains (losses)	51	310	456	817
Purchases	157	-	-	157
Transfers in (out)	357	-	-	357
Fair value, June 30, 2017	**$2,124**	**$5,290**	**$10,710**	**$18,124**

	Deferred Compensation	Common Stock	Trusts Held by Others	Total
Fair value, July 1, 2015	$1,440	$4,681	$10,641	$16,762
Unrealized gains (losses)	35	299	(387)	(53)
Purchases	129	-	-	129
Transfers in (out)	(45)	-	-	(45)
Fair value, June 30, 2016	**$1,559**	**$4,980**	**$10,254**	**$16,793**

All net realized and unrealized gains (losses) in the tables above are reflected in nonoperating activities in the accompanying Consolidated Statements of Activities. Net unrealized gains (losses) relate to those financial instruments held by the university at June 30.

8. SPONSORED PROJECTS REVENUE

The major components of sponsored projects revenue for the years ended June 30, 2017 and 2016 are as follows *(dollars in thousands):*

	2017	2016
Federal		
Direct	$273,170	$287,829
Indirect	49,929	49,450
Total federal	$323,099	$337,279
State, industrial and other		
Direct	$45,036	$39,023
Indirect	8,766	8,236
Total state, industrial and other	$53,802	$47,259
Total sponsored projects revenue	**$376,901**	**$384,538**

Included in federal, direct sponsored projects revenue for the fiscal year ended June 30, 2017 is $1.7 million from the ARM Institute (Note 2). Included in other sponsored projects revenue for the fiscal years ended June 30, 2017 and 2016 are amounts from private sources (foundation grants), which amounted to $11.7 million and $8.8 million, respectively.

9. LAND, BUILDINGS AND EQUIPMENT

Land, buildings and equipment at June 30 consist of the following *(dollars in thousands):*

	2017	**2016**
Buildings	$1,162,389	$1,140,255
Movable equipment	272,008	256,717
Utilities and building-related assets	80,041	69,646
Land improvements	12,886	12,866
Leasehold improvements	20,018	19,755
Subtotal	$1,547,322	$1,499,239
Accumulated depreciation	(836,920)	(779,150)
Subtotal	$710,402	$720,089
Land	49,161	48,361
Construction and equipment in progress	125,073	48,946
Land, buildings and equipment, net	**$884,636**	**$817,396**

Carnegie Mellon acquired $7.7 million and $12.7 million in equipment through grants for the years ended June 30, 2017 and 2016, respectively.

Also included in movable equipment is unamortized computer software cost of $18.2 million and $22.4 million for the years ended June 30, 2017 and 2016, respectively. Software amortization expense of $4.4 million and $5.1 million was charged to expense for the years ended June 30, 2017 and 2016, respectively.

10. DEBT OBLIGATIONS

Debt obligations consist of the following as of June 30, 2017 and 2016, including unamortized premiums of $11.8 million and $14.0 million, respectively *(dollars in thousands):*

	Interest %	2017	2016
Allegheny County Higher Education Building Authority, Variable Rate Revenue Bonds, Series A 2008	Variable	$120,820	$120,820
Pennsylvania Higher Education Facilities Authority, Fixed University Revenue Bonds, Series 2009	3.5-5.0%	174,804	175,818
Allegheny County Higher Education Building Authority, Fixed Revenue Refunding Bonds, Series A 2012	2.5-5.0%	36,816	37,418
Allegheny County Higher Education Building Authority, Variable Revenue Refunding Bonds, Series B 2012	Variable	50,000	50,000
Allegheny County Higher Education Building Authority, Variable Revenue Bonds, Series 2013	4.0-5.0%	57,619	58,291
Collaborative Innovation Center Tax Increment Financing	7.5-8.5%	1,980	2,235
Collaborative Innovation Center Mortgage Obligation	6.78%	14,982	15,640
Taxable Commercial Paper	Various	25,000	25,000
Taxable Senior Notes	3.6%	70,000	-
Total debt obligations		**$552,021**	**$485,222**

Series 2008 Bonds

On April 10, 2008, Carnegie Mellon issued, through the Allegheny County Higher Education Building Authority (ACHEBA), Variable Rate University Revenue Bonds, Series A 2008 Bonds, with a face value of $120.8 million (the "2008 Bonds"). The proceeds of the 2008 Bonds were used to finance the cost of refunding the 2006 Bonds and 2007 Bonds. The 2008 Bonds are subject to a mandatory sinking fund redemption as follows: $5.1 million in fiscal year 2027, $30.0 million in fiscal years 2035 through 2037, and $25.7 million in fiscal year 2038. The 2008 Bonds currently pay interest at a variable market rate determined daily by the Bonds' remarketing agent. Average interest rates on the 2008 Bonds were 0.61% and 0.10% during fiscal years 2017 and 2016, respectively.

Carnegie Mellon has entered into a Standby Bond Purchase Agreement (SBPA) with a financial institution that will purchase the 2008 bonds if they cannot be remarketed. This SBPA was renewed on January 12, 2015 for a three-year term ending January 12, 2018. If the Bank does not renew the agreement, it must provide notification at least 60 days prior to the expiration date. See the Aggregate Maturities section of this Note 10 for additional discussion of the SBPA.

Series 2009 Bonds

On August 5, 2009, Carnegie Mellon issued through the Pennsylvania Higher Educational Facilities Authority (PHEFA), Fixed Rate Revenue Bonds, Series 2009 Bonds, with a face value of $172.4 million (the "2009 Bonds"). The proceeds of the 2009 Bonds, including an original issue premium of $10.8 million, were used to finance the cost of refunding the 1995 Bonds, to fund certain capital acquisitions and projects, and to pay certain costs of issuance of the Bonds. The 2009 Bonds mature at $52.4 million in fiscal year 2018, $60.0 million each in fiscal years 2020 and 2022. The 2009 Bonds maturing on or after August 1, 2019 are subject to optional redemption prior to their scheduled maturity on or after February 1, 2019. The 2009 Bonds bear fixed rates of interest, and the effective interest rate on the 2009 Bonds, including the effect of the original issue premium, was 4.14% and 4.10% during fiscal years 2017 and 2016, respectively. Subsequent to June 30, 2017, these bonds were partially refunded (Note 20).

Series 2012 Bonds

On March 1, 2012, Carnegie Mellon issued ACHEBA, Revenue Refunding Bonds, Series A 2012 Bonds, with a face value of $58.1 million, and Series B 2012 Bonds, with a face value of $50.0 million (the "2012 Bonds"). The proceeds of the 2012 Bonds, including an original issue premium of $10.2 million, were used to finance the cost of refunding the 1998 Bonds and the 2002 Bonds, and to pay certain costs of issuance of the 2012 Bonds.

In fiscal year 2015, $25.3 million of the Series A 2012 Bonds matured and were refinanced with the university's commercial paper program. In March 2024, $32.8 million of the Series A 2012 Bonds mature and are subject to optional redemption prior to their scheduled maturity on or after March, 2022. The Series A 2012 Bonds bear fixed rate interest and the effective rates, including the effect of the original issue premium, was 3.10% during fiscal years 2017 and 2016.

All $50.0 million of the Series B 2012 Bonds mature in the fiscal year 2019. The Series B 2012 Bonds bear variable rates of interest based on one month LIBOR. Average interest rates on the Bonds were 1.16% and 0.9% during fiscal years 2017 and 2016, respectively.

Series 2013 Bonds

On March 1, 2013, Carnegie Mellon issued through the ACHEBA, Revenue Bonds, Series 2013 Bonds, with a face value of $52.3 million (the "2013 Bonds"). The proceeds of the 2013 Bonds, including an original issue premium of $8.3 million, were used to finance a portion of the costs of construction of Scott Hall and to pay certain costs of issuance of the 2013 Bonds. The 2013 Bonds mature at $10.0 million in fiscal year 2021, $22.3 million in fiscal year 2028 and $20.0 million in fiscal year 2043. The 2013 Bonds maturing on or after March 1, 2028 are subject to optional redemption prior to maturity on or after March 1, 2023. The 2013 Bonds bear fixed rates of interest and the effective interest rate including the effect of the original issue premium was 3.33% during fiscal years 2017 and 2016.

Collaborative Innovation Center

On September 30, 2014, Carnegie Mellon acquired the Collaborative Innovation Center (CIC) from the Regional Industrial Asset District (RIDC) when Carnegie Mellon and RIDC agreed to terminate the long-term ground lease for the land on which the CIC building was built. The CIC building was originally built and owned by the Regional Industrial Development Corporation (RIDC) on land owned and leased by Carnegie Mellon to RIDC pursuant to a long-term ground lease. Prior to the termination of the ground lease, the CIC was recorded as a capital lease by Carnegie Mellon.

As part of the agreement to terminate the ground lease, Carnegie Mellon assumed a $16.8 million mortgage note. The mortgage note requires monthly principal and interest payments, bears interest at a fixed rate of 6.78% and matures on March 1, 2025. The mortgage note is secured by the CIC building (carrying value of $25.7 million), the land where CIC is located and rents derived from the operation of CIC.

Carnegie Mellon also assumed the sole responsibility to make semi-annual payments of any shortfall between the amount of real estate and parking taxes collected and pledged under a Tax Increment Financing (TIF)) agreement, and the debt service and annual cost of the TIF. Carnegie Mellon is obligated to timely fund that shortfall until the TIF is satisfied in full on October 5, 2022. The balance of the outstanding TIF note was $2.0 million and $2.2 million at June 30, 2017 and 2016, respectively. The TIF note bears interest at a rate of 7.5% through April 30, 2016 and 8.5% from May 1, 2016 through maturity.

Taxable Commercial Paper

In February 2015, Carnegie Mellon instituted a taxable commercial paper program that allows the university to issue in aggregate up to $70.0 million in commercial paper notes. Proceeds from the issuance of commercial paper may be used to refund outstanding debt, to finance capital projects and to otherwise support operations.

On February 24, 2015, the university issued $30.0 million of commercial paper, primarily to refund $25.3 million of the Series A 2012 Bonds that matured on March 1, 2015, and to cover costs of issuances. The notes outstanding at June 30, 2017 of $25.0 million bear a fixed rate of interest of 1.16%, payable upon maturity, with a maturity of 23 days. All outstanding commercial paper was retired on July 19, 2017, in conjunction with the issuance of the Series 2017 Bonds (Note 20).

Taxable Senior Notes

In February 2017, Carnegie Mellon issued two senior notes in the aggregate amount of $70.0 million to a life insurance company. These notes bear interest at 3.6% payable semiannually with principal due on February 1, 2047. Proceeds from the issuance of these notes may be used to refund outstanding debt, to finance capital projects and to otherwise support operations.

Interest Expense

Cash paid for interest on financing obligations for the fiscal years ended June 30, 2017 and 2016 totaled $14.8 million and $14.1 million, respectively. The university utilizes interest rate swaps to synthetically adjust its exposure to variable rates. Including the swap expense, cash paid for interest for the fiscal years ended June 30, 2017 and 2016 was $20.1 million and $19.6 million, respectively. For the fiscal year ended June 30, 2016, interest expense of $2.2 million was capitalized related to construction in progress.

Aggregate Maturities

Aggregate maturities of bonds and other debt instruments for each of the next five years ending June 30, excluding commercial paper, are as follows *(dollars in thousands):*

2018	$53,481
2019	51,135
2020	61,207
2021	11,303
2022	61,404
Thereafter	276,737
Total	**$515,267**

The university has outstanding variable rate demand bonds in the amount of $120.8 million which are subject to daily optional tender by the bondholders. These bonds are reflected in the table above based on original scheduled maturities. In the event that a bondholder tenders these variable rate demand bonds, the purchase price will be repaid from the remarketing of the bonds to a new investor. However, in the event that none of the bonds could be remarketed, the Standby Bond Purchase Agreement (SBPA) provider would purchase the bonds. The bonds would then become amortizing five-year bank bonds, payable back to the liquidity provider per the terms of the agreement. See the Series 2008 Bonds section of this Note 10 for additional discussion of the SBPA terms.

Line of Credit

The university has a $50.0 million unsecured line of credit agreement that expires October 19, 2017. The university did not draw on the line of credit during the years ending June 30, 2017 and 2016. No advances were outstanding at June 30, 2017. Advances accrue interest at 1 month LIBOR plus 1.25% (2.47% at June 30, 2017).

11. TEMPORARILY AND PERMANENTLY RESTRICTED NET ASSETS

Temporarily restricted net assets are available for the following purposes as of June 30 *(dollars in thousands):*

	2017	2016
Endowment earnings	$538,735	$426,091
Capital and other donor designations	193,351	173,633
Pledges and assets held in trust by others	65,548	80,964
Split interest agreements	3,501	3,554
Term endowments	5,005	4,860
Loan funds	1,351	1,163
Total	**$807,491**	**$690,265**

Permanently restricted net assets as of June 30 are comprised of *(dollars in thousands):*

	2017	2016
Endowment	$753,714	$659,465
Pledges and assets held in trust by others	52,484	47,508
Split interest agreements and other donor designations	5,381	5,580
Total	**$811,579**	**$712,553**

12. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

Carnegie Mellon has entered into the following interest rate swap agreements to adjust the exposure to variable interest rates *(dollars in thousands):*

SWAP Agreement	Effective Date	Notional Amount	Interest Rate paid	Interest Received	Term (in years)	Termination Date	Counterparty Cancellation Option
Oct 2004	Oct 2004	$ 50,000	3.0 %	67% of 1M LIBOR	15	Oct 2019	Oct 2014*
Apr 2006	Dec 2006	$ 100,000	3.4 %	67% of 1M LIBOR	22	Dec 2028	Dec 2016
May 2007	Jun 2007	$ 5,125	3.8 %	67% of 1M LIBOR	20	Mar 2027	N/A
May 2007	Mar 2012	$ 40,325	3.8 %	67% of 1M LIBOR	20	Mar 2032	N/A
Mar 2012	Mar 2012	$ 38,000	SIFMA	1.92%	12	Mar 2024	N/A

** Counterparty cancellation option is monthly after October 1, 2014.*

The following fair values of the swap agreements were recorded as accounts payable and other liabilities and other assets in the Consolidated Statements of Financial Position for the years ended June 30, 2017 and 2016 *(dollars in thousands):*

	Derivatives Reported as Assets/(Liabilities)	
Date of Swap Agreement	**2017**	**2016**
Oct 2004	$(2,178)	$(4,126)
Apr 2006	(18,933)	(27,731)
May 2007	(1,025)	(1,455)
May 2007	(9,740)	(13,654)
Mar 2012	730	2,791
Total	**$(31,146)**	**$(44,175)**

The fair value of these agreements is estimated to be an amount that Carnegie Mellon would receive (receivable) or pay (liability) to voluntarily terminate the agreement. Based upon the university's credit rating, the university is required to post collateral equal to the amount by which the liability value exceeds $25.0 million for each of its counterparties. Collateral of $1.3 million was required to be posted as of June 30, 2016. No such collateral was required as of June 30, 2017.

The following interest expense and mark to market gains/(losses) were recorded as other sources under nonoperating activities in the Consolidated Statements of Activities for the years ended June 30, 2017 and 2016 *(dollars in thousands):*

Date of Swap Agreement	**Interest (Expense)**		**Fair Value (Loss) Gain**		**Total (Loss) Gain**	
Interest rate swaps:	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**
Oct 2004	$(1,280)	$(1,406)	$1,948	$173	$668	$(1,233)
Apr 2006	(2,965)	(3,214)	8,798	(8,218)	5,834	(11,432)
May 2007	(170)	(182)	430	(343)	260	(525)
May 2007	(1,337)	(1,435)	3,914	(3,696)	2,577	(5,131)
Mar 2012	474	682	(2,061)	2,037	(1,587)	2,719
Total	**$(5,278)**	**$(5,555)**	**$13,029**	**$(10,047)**	**$7,752**	**$(15,602)**

Carnegie Mellon utilizes energy forward contracts, which are physically settled, to hedge against the future changes in the cost of electricity and natural gas. These contracts limit Carnegie Mellon's exposure to higher rates; however, they could also limit the benefit of decreases in rates. These contracts qualify for normal purchases and sales exemptions and are not required to be recognized on the balance sheet at fair value because Carnegie Mellon takes physical delivery of the electricity and natural gas and the gains and losses are already recognized in the cost.

13. EXPENSES BY FUNCTIONAL CATEGORY

Operating expenses by functional category for the years ended June 30, 2017 and 2016 are as follows *(dollars in thousands):*

	2017	2016
Instruction and departmental research	$393,727	$370,356
Sponsored projects	340,740	345,584
Administration and institutional support	140,660	122,989
Academic support	146,797	149,470
Student service	56,110	51,671
Auxiliary services and activities	50,220	49,037
Total	**$1,128,254**	**$1,089,107**

Total fundraising expense of $23.5 million and $19.0 million ($20.6 million and $17.4 million in administration and institutional support) is included above for the years ended June 30, 2017 and 2016, respectively.

14. COMMITMENTS AND CONTINGENCIES

Carnegie Mellon is a defendant in a number of legal actions seeking damages and other relief. While the final outcome of each action cannot be determined at this time, management records a reserve in operating activities for those cases in which the loss is both probable and estimable. For the other legal actions that are not reserved, legal counsel and management are of the opinion that the liability, if any, will not have a material effect on Carnegie Mellon's consolidated financial statements.

Carnegie Mellon receives significant financial assistance from the federal government, including the sponsorship of federal research projects. Research grants and contracts normally provide for the recovery of direct and indirect costs. Entitlement to the recovery of the applicable direct and related indirect costs is generally conditional upon compliance with the terms and conditions of the grant agreements and applicable federal regulations, including the expenditure of the resources for eligible purposes. Substantially all grants and Carnegie Mellon's indirect cost rate are subject to financial and compliance reviews and audits by the grantors. In management's opinion, the likelihood of an adverse material outcome upon its financial position from those reviews and audits is remote.

Lease expense primarily related to facilities was $21.2 million and $19.3 million (excluding international donated space of $9.1 million and $8.9 million) for the years ending June 30, 2017 and 2016, respectively. Future minimum operating lease payments at June 30, 2017 are as follows *(dollars in thousands):*

2018	$18,500
2019	10,529
2020	9,808
2021	3,732
2022	1,827
Thereafter	2,526
Total	**$46,922**

At June 30, 2017 and 2016, Carnegie Mellon had contractual obligations of approximately $91.2 million and $33.8 million, respectively, in connection with major construction projects.

15. RETIREMENT PLANS AND OTHER POST-EMPLOYMENT BENEFITS

Carnegie Mellon sponsors two defined contribution retirement plans for eligible faculty and staff, health care plans for retirees, and participates in a multi-employer pension fund for union staff. Retirement plan expense for the years ended June 30, 2017 and 2016 totaled $36.4 million and $34.8 million, respectively. Carnegie Mellon contributed $0.5 million per year to the Central Pension Fund of the International Union of Operating Engineers, a multi-employer plan in fiscal years 2017 and 2016. See below for a discussion of the assets held in trust to fund post-retirement health care and other post-employment benefits.

Carnegie Mellon provides certain health care benefits for eligible retired employees. The liability for post-retirement benefit obligations is recorded in the Consolidated Statements of Financial Position in accounts payable and other liabilities. Cumulative amounts recognized within post-retirement benefit obligations and not yet recognized as components of net periodic benefit cost consist of the following at June 30 *(dollars in thousands):*

	2017	**2016**
Net actuarial gain	$(6,300)	$(6,852)
Prior service credit	-	(110)
Total	**$(6,300)**	**$(6,962)**

The components of net periodic benefit costs and other changes in benefit obligations recognized in the Consolidated Statements of Activities for the years ended June 30, 2017 and 2016 are as follows *(dollars in thousands):*

	2017	2016
Components of net periodic benefit cost		
Service cost	$1,318	$1,078
Interest cost	889	899
Amortization of prior service credit	(110)	(403)
Amortization of net gain	(328)	(544)
Net periodic benefit cost	**$1,769**	**$1,030**
Other changes in benefit obligation recognized in the statement of activities		
Assumption changes and actuarial loss/(gain)	$224	$2,176
Amortization of prior service credit	110	403
Amortization of net gain	328	544
Total recognized in nonoperating activities	$662	$3,123
Total recognized in net periodic benefit cost and nonoperating activities	**$2,431**	**$4,153**

During fiscal year 2018, amortization of $0.3 million actuarial gain is expected to be recognized as components of net periodic benefit cost. The discount rate used in determining the net periodic benefit cost was 3.7% and 4.5% for the years ended June 30, 2017 and 2016, respectively.

The reconciliation of the accumulated benefit obligation and funded status at June 30 is as follows *(dollars in thousands):*

	2017	2016
Benefit obligation, beginning of year	**$22,895**	**$19,059**
Service cost	1,318	1,078
Interest cost	889	899
Assumption changes and actuarial gain/(losses)	224	2,176
Benefit payments	(250)	(317)
Benefit obligation, end of year	**$25,076**	**$22,895**
Fair value of plans' assets	-	-
Funded status	**$25,076**	**$22,895**

The assumed discount rate used for calculating the benefit obligation for the fiscal years ended June 30, 2017 and 2016 was 3.9% and 3.7%, respectively. An annual rate of increase in the per capita cost of covered health care benefits for the fiscal years ended June 30, 2017 and 2016 of 7.0% was assumed. For the fiscal years ended June 30, 2017 and 2016, the rate was assumed to decrease gradually to 5.0% by 2026 and 2022, respectively, and remain at 5.0% thereafter.

The health care cost trend rate assumption has a significant effect on the amounts reported. Increasing the assumed health care cost trend rate by 1.0% in each year would increase the benefit obligation as of June 30, 2017 and 2016 by $4.8 million and $4.3 million, respectively, and increase the aggregate service cost and interest cost components for 2017 and 2016 by $0.5 million and $0.4 million, respectively. Decreasing the assumed health care cost trend rate by 1.0% in each year would decrease the benefit obligation as of June 30, 2017 and 2016 by $3.7 million and $3.4 million, respectively, and decrease the aggregate service cost and interest cost components for 2017 and 2016 by $0.4 million and $0.3 million, respectively.

Expected benefits to be paid in future fiscal years are as follows *(dollars in thousands):*

June 30	Retiree Contributions	Employer Payments	Total Expected Benefit Payments
2018	$630	$361	$991
2019	924	549	1,473
2020	1,214	708	1,922
2021	1,505	843	2,348
2023	1,805	974	2,779
2024–2027	13,775	6,382	20,157

In conjunction with an agreement made with the federal government, Carnegie Mellon has established a separate trust, which is available to general creditors only in the event of insolvency. Assets in the trust to fund post-retirement health care and other post-employment benefits are $21.7 and $21.6 million for June 30, 2017 and 2016, respectively. These assets are reflected as investments in the accompanying Consolidated Statements of Financial Position.

16. RELATED PARTY TRANSACTIONS

Sponsored projects revenue for fiscal years 2017 and 2016 includes $3.2 million and $4.4 million, respectively, received from MPC, a nonprofit related entity of Carnegie Mellon and the University of Pittsburgh. The revenue primarily represents federal funding from various contracts received by MPC, for which MPC has subcontracted to Carnegie Mellon for support of a supercomputer and related activities.

Carnegie Mellon is an owner as a tenant in common of the Bellefield Boiler Plant (“Bellefield”) for the purpose of sharing of the steam produced by the plant. Bellefield operates such that all of the operating costs of the plant are passed to the owners in the form of steam prices. Carnegie Mellon is obligated for a percent of liabilities based upon use of steam produced by Bellefield. As of June 30, 2017 and 2016, Carnegie Mellon’s percentage obligation was 15.2%. Included in other assets at June 30, 2017 and 2016 are $0.4 million of advances, respectively, resulting primarily from operating surpluses. Included in occupancy and related expenses is $3.4 million and $3.6 million for steam costs paid to Bellefield for the years ended June 30, 2017 and 2016, respectively.

Carnegie Mellon is one of fifteen designated institutions of higher learning and other charitable organizations named as beneficiaries of The Dietrich Foundation (the "Foundation") created by William S. Dietrich II pursuant to an Amended and Restated Declaration of Trust dated August 23, 2011. The Foundation came into existence as a Pennsylvania charitable trust on October 6, 2011, and was granted exemption from Federal income tax under section 501(c)(3) of the Internal Revenue Code, specifically as a Type I charitable supporting organization under section 509(a)(3). The Foundation's primary mission is to provide ongoing and increasing financial support to a number of educational institutions, largely in the greater Pittsburgh area, including Carnegie Mellon. The Foundation is governed by a board of nine (9) trustees. Five (5) of the trustees are Educational Institutions Trustees, of which two (2) are appointed by Carnegie Mellon.

The Foundation is expected to make annual distributions that will be allocated among the pre-specified supported organizations, which are divided into two primary groups: (a) six (6) educational institutions, which collectively shall receive 90% of the annual distribution amount, and (b) nine (9) other charitable organizations or component funds of such charitable organizations which collectively shall receive 10% of the annual distribution amount. Carnegie Mellon is included in the 90% group. As of June 30, 2017, Carnegie Mellon's distribution share remained at 53.5%.

The distributions to Carnegie Mellon have been recorded as permanently restricted contribution revenue as received and held in a permanently restricted endowment funds designated as Dietrich Foundation Endowment Funds. The endowed funds will be managed in accordance with Carnegie Mellon's generally applicable investment and disbursement policies in effect for its other permanently restricted endowments. Distributions made from the endowed funds will be used for the purposes authorized by the Foundation's Trustees. Distributions of $12.3 million and $11.4 million were received in fiscal years 2017 and 2016, respectively.

17. CONDITIONAL ASSET RETIREMENT OBLIGATIONS

Conditional asset retirement obligations of $5.0 million and $5.2 million are included within accounts payable and other liabilities in the Consolidated Statements of Financial Position as of June 30, 2017 and 2016 respectively. These obligations primarily relate to asbestos abatement and other environmental remediation costs and are discounted to the present value of future cash flows as of the date of expected abatement.

The following table reconciles the asset retirement obligations as of June 30, 2017 and 2016 *(dollars in thousands):*

	2017	**2016**
Asset retirement obligations as of July 1	$5,182	$5,042
Accretion expense	202	202
Liabilities assumed	-	--
Liabilities settled or disposed	(371)	(62)
Asset retirement obligations as of June 30	**$5,013**	**$5,182**

The discount rates used range from 3.3% to 5.1%. The expected aggregate undiscounted amount is $7.0 million. The majority of the obligation will be paid out over the next 2 to 15 years.

18. GUARANTEES

In the ordinary course of business, Carnegie Mellon engages in transactions with third parties involving the provision of goods and/or services. The contracts for these transactions may require Carnegie Mellon to indemnify the third party or others under certain circumstances. The terms of indemnity vary from contract to contract. The amount of the liability associated with such indemnification obligations, if any, is not expected to be material.

Carnegie Mellon has contractually agreed to indemnify its trustees and officers, and in some cases its employees and agents, against certain liabilities incurred as a result of their service on behalf of or at the request of Carnegie Mellon and also advances, on behalf of those indemnified, the costs incurred by them in defending certain claims. Carnegie Mellon carries insurance that limits its exposure for this indemnification obligation. The amount of the liability associated with any known pending or threatened claims covered by this indemnification obligation, if any, is not expected to be material.

Carnegie Mellon has contractually agreed to indemnify specified parties in connection with bond offerings in which it has been involved. The indemnification obligation covers losses, claims, damages, liabilities and other expenses incurred by the underwriters as a result of any untrue statements or material omissions made by Carnegie Mellon in connection with the bond offerings. The amount of the liability associated with any known pending or threatened claims covered by this indemnification obligation, if any, is not expected to be material.

19. MARVELL LITIGATION SETTLEMENT

On March 6, 2009, Carnegie Mellon instituted an action against Marvell Technology Group Ltd. (“MTGL”) and Marvell Semiconductor, Inc. (“MSI”) (collectively, “Marvell”) alleging infringement of two patents owned by the university. On February 16, 2016, Carnegie Mellon and Marvell reached a settlement in the 2009 patent infringement lawsuit, entering into a Settlement Agreement and Patent License and a Release Agreement (collectively, the “Settlement Agreements”) that include a mutual release of claims, covenant not to sue and a patent license. Under the Settlement Agreements, MTGL agreed to make a $750.0 million payment to the university, which, after legal fees and related expenses, was required to be shared with the inventors in accordance with Carnegie Mellon’s Intellectual Property Policy.

The final settlement proceeds were subject to clawback and certain related legal fees, expenses and payment to the inventors were contingent should there have been a Marvell bankruptcy prior to final dismissal of the action. At June 30, 2016, the $750.0 million settlement payment received was reflected in cash and cash equivalents and deferred revenue and settlement proceeds in the Consolidated Statements of Financial Position. The net amount retained by the university (after legal fees and related expenses and distribution to the inventors in accordance with Carnegie Mellon’s Intellectual Property Policy) of approximately $270.9 million was recognized as a non-operating gain after dismissal of the action during the fiscal year ended June 30, 2017.

20. SUBSEQUENT EVENTS

The university has performed an evaluation of subsequent events through October 4, 2017, the date on which the consolidated financial statements were issued. On July 19, 2017, Carnegie Mellon issued ACHEBA, Carnegie Mellon University Revenue Bonds, Series 2017, with a face value of $62.2 million (the “2017 Bonds”). The proceeds of the 2017 Bonds were used to refund $52.4 million of the Series 2009 Bonds and to retire the outstanding Taxable Commercial Paper.

CARNEGIE MELLON UNIVERSITY

BOARD OF TRUSTEES

2016–2017

EMERITUS TRUSTEES

Carnegie Mellon University

5000 Forbes Avenue
Pittsburgh, PA 15213

Finance Division
4516 Henry Street
Pittsburgh, PA 15213

www.cmu.edu/finance
fin-comm@andrew.cmu.edu

DESIGNED AND PRODUCED BY Marketing and Communications