California Institute of Technology
EIN: 95-1643307

Report on Audit of the Financial Statements and on Federal Awards Programs in Accordance with the OMB Uniform Guidance (exclusive of the Jet Propulsion Laboratory)

For the Year Ended September 30, 2017

California Institute of Technology
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For the Year Ended September 30, 2017

Report of Independent Auditors

To the Board of Trustees of the
California Institute of Technology

Report on the Financial Statements

We have audited the accompanying financial statements of the California Institute of Technology, which comprise the balance sheets as of September 30, 2017 and 2016, and the related statements of activities and of cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of the 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 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 financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Institute's preparation and fair presentation of the 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 Institute'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 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 financial statements referred to above present fairly, in all material respects, the financial position of the California Institute of Technology as of September 30, 2017 and 2016, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying schedule of expenditures of federal awards for the year ended September 30, 2017 is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and is not a required part of the financial statements. As described in Note 1 to the schedule of expenditures of federal awards, the accompanying schedule of expenditures of federal awards was prepared on the cash basis, which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards is fairly stated, in all material respects, on the basis of accounting described in Note 1, in relation to the financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated January 24, 2018 on our consideration of the Institute's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters for the year ended September 30, 2017. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Institute's internal control over financial reporting and compliance.

PricewaterhouseCoopers LLP

Los Angeles, California
January 24, 2018

California Institute of Technology
Balance Sheets
At September 30, 2017 and 2016
(Dollars in Thousands)

	2017	2016
ASSETS		
Cash and cash equivalents (Notes B and D)	$ 6,603	$ 6,374
Accounts and notes receivable, net		
United States government	299,634	231,915
Other	15,856	61,424
Contributions receivable, net	254,240	212,398
Investments	3,398,068	3,028,378
Prepaid expenses and other assets	182,475	175,629
Deferred United States government billings	347,521	371,378
Property, plant, and equipment, net	912,604	862,460
Total assets	$ 5,417,001	$ 4,949,956
LIABILITIES and NET ASSETS		
Liabilities:		
Accounts payable and accrued expenses	$ 378,469	$ 318,916
Accrued compensation and benefits	228,486	209,465
Deferred revenue and refundable advances	34,474	32,955
Annuities, trust agreements, and agency funds	92,035	89,761
Bonds and notes payable, net	1,248,898	1,255,505
Accumulated postretirement benefit obligation	394,130	415,710
Total liabilities	2,376,492	2,322,312
Net assets:		
Unrestricted	555,796	424,153
Temporarily restricted	857,556	766,388
Permanently restricted	1,627,157	1,437,103
Total net assets	3,040,509	2,627,644
Total liabilities and net assets	$ 5,417,001	$ 4,949,956

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

California Institute of Technology
Statement of Activities
For the Year Ended September 30, 2017
(with summarized financial information for the year ended September 30, 2016)
(Dollars in Thousands)

	Unrestricted	Temporarily Restricted	Permanently Restricted	2017 Total	2016 Total
Operating revenues:					
Tuition and fees, net of student financial aid	$ 41,342	$ -	$ -	$ 41,342	$ 40,814
Endowment spending, distributed	46,562	82,782	-	129,344	120,359
Gifts and pledges	27,190	11,516	-	38,706	149,257
Grants and contracts:					
Jet Propulsion Laboratory - direct	2,284,060	-	-	2,284,060	1,870,621
United States government, Campus - direct	179,691	-	-	179,691	166,131
Other Campus - direct	31,026	-	-	31,026	27,718
Recovery of indirect costs and allowances	125,083	-	-	125,083	121,198
Auxiliary enterprises	30,109	-	-	30,109	28,933
Other	35,199	-	-	35,199	36,621
Net assets released from restrictions	148,310	(148,310)	-	-	-
Total operating revenues	2,948,572	(54,012)	-	2,894,560	2,561,652
Operating expenses:					
Compensation and benefits	373,418	-	-	373,418	368,352
Supplies and services	124,837	-	-	124,837	120,033
Subcontracts	30,474	-	-	30,474	31,647
Graduate fellowships	19,652	-	-	19,652	19,037
Depreciation, accretion, and amortization	67,167	-	-	67,167	65,913
Utilities	14,931	-	-	14,931	16,992
Interest	23,291	-	-	23,291	20,742
Jet Propulsion Laboratory	2,284,060	-	-	2,284,060	1,870,621
Total operating expenses	2,937,830	-	-	2,937,830	2,513,337
Results of operations	10,742	(54,012)	-	(43,270)	48,315
Non-operating changes:					
Investment return in excess of endowment spending	126,250	126,933	7,031	260,214	71,177
Endowment spending, undistributed	1,234	9,897	783	11,914	10,363
Net assets released from restrictions	135	(135)	-	-	-
Gifts and pledges	13,227	10,421	188,227	211,875	143,605
Changes in fair value of interest rate swap	20,116	-	-	20,116	(15,112)
Non periodic changes in benefit obligations	(6,972)	-	-	(6,972)	(19,859)
Interest expense	(23,609)	-	-	(23,609)	(23,214)
Loss on retirement of debt	-	-	-	-	(10,158)
Redesignations, reclassifications and other	(9,480)	(1,936)	(5,987)	(17,403)	(2,087)
Total non-operating activities	120,901	145,180	190,054	456,135	154,715
Increase in net assets	131,643	91,168	190,054	412,865	203,030
Net assets at beginning of year	424,153	766,388	1,437,103	2,627,644	2,424,614
Net assets at end of year	$ 555,796	$ 857,556	$ 1,627,157	$ 3,040,509	$ 2,627,644

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

California Institute of Technology
Statement of Activities
For the Year Ended September 30, 2016
(Dollars in Thousands)

	Unrestricted	Temporarily Restricted	Permanently Restricted	2016 Total
Operating revenues:				
Tuition and fees, net of student financial aid	$ 40,814	$ -	$ -	$ 40,814
Endowment spending, distributed	54,597	65,762	-	120,359
Gifts and pledges	48,235	101,022	-	149,257
Grants and contracts:				
Jet Propulsion Laboratory - direct	1,870,621	-	-	1,870,621
United States government, Campus - direct	166,131	-	-	166,131
Other Campus - direct	27,718	-	-	27,718
Recovery of indirect costs and allowances	121,198	-	-	121,198
Auxiliary enterprises	28,933	-	-	28,933
Other	36,621	-	-	36,621
Net assets released from restrictions	114,105	(114,105)	-	-
Total operating revenues	2,508,973	52,679	-	2,561,652
Operating expenses:				
Compensation and benefits	368,352	-	-	368,352
Supplies and services	120,033	-	-	120,033
Subcontracts	31,647	-	-	31,647
Graduate fellowships	19,037	-	-	19,037
Depreciation, accretion, and amortization	65,913	-	-	65,913
Utilities	16,992	-	-	16,992
Interest	20,742	-	-	20,742
Jet Propulsion Laboratory	1,870,621	-	-	1,870,621
Total operating expenses	2,513,337	-	-	2,513,337
Results of operations	(4,364)	52,679	-	48,315
Non-operating changes:				
Investment return in excess of endowment spending	45,513	25,092	572	71,177
Endowment spending, undistributed	2,737	6,974	652	10,363
Net assets released from restrictions	2,995	(2,995)	-	-
Gifts and pledges	1,606	5,830	136,169	143,605
Changes in fair value of interest rate swap	(15,112)	-	-	(15,112)
Non periodic changes in benefit obligations	(19,859)	-	-	(19,859)
Interest expense	(23,214)	-	-	(23,214)
Loss on retirement of debt	(10,158)	-	-	(10,158)
Redesignations, reclassifications and other	(63,199)	(9,263)	70,375	(2,087)
Total non-operating activities	(78,691)	25,638	207,768	154,715
Increase in net assets	(83,055)	78,317	207,768	203,030
Net assets at beginning of year	507,208	688,071	1,229,335	2,424,614
Net assets at end of year	$ 424,153	$ 766,388	$ 1,437,103	$ 2,627,644

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

California Institute of Technology
Statements of Cash Flows
For the Years Ended September 30, 2017 and 2016
(Dollars in Thousands)

	2017	2016
Cash flows from operating activities:		
Increase in net assets	$ 412,865	$ 203,030
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Depreciation, accretion, and amortization	67,167	65,913
Changes in postemployment benefit obligations	6,972	19,859
Contributions restricted for long-term investment and capital projects	(182,984)	(136,682)
Realized and unrealized (gains)/losses on investments and swap	(369,135)	(147,066)
Other non-cash items	(5,342)	2,123
Changes in assets and liabilities:		
Accounts and notes receivable, net	(68,007)	(12,843)
Contributions receivable, net	10,570	(65,578)
Prepaid expenses and other assets	(18,901)	(6,244)
Deferred United States government billings	23,857	(21,438)
Accounts payable and accrued expenses	62,913	10,102
Accrued compensation and benefits	19,021	18,529
Deferred revenue, refundable advances, and agency funds	2,807	(15,427)
Accumulated postretirement benefit obligation	(28,552)	16,099
Net cash used in operating activities	(66,749)	(69,623)
Cash flows from investing activities:		
Purchases of investments	(739,186)	(831,184)
Proceeds from sales and maturities of investments	781,345	795,977
Purchases of property, plant, and equipment	(105,721)	(61,622)
Proceeds from sale of property, plant, and equipment	3,175	1,798
Net cash used in investing activities	(60,387)	(95,031)
Cash flows from financing activities:		
Contributions restricted for long-term investment and capital projects	133,389	91,145
Investment return restricted for long-term investment and capital projects	914	996
Cash received under annuity and trust agreements	6,258	5,474
Cash payments made under annuity and trust agreements	(6,396)	(7,232)
Net (repayments)/borrowings of short-term debt	(6,800)	17,170
Bond issuance costs	-	(1,849)
Proceeds from issuance of long-term debt	-	150,000
Cash paid for retirement of long-term debt	-	(89,933)
Net cash provided by financing activities	127,365	165,771
Net increase in cash and cash equivalents	229	1,117
Cash and cash equivalents at beginning of year	6,374	5,257
Cash and cash equivalents at end of year	$ 6,603	$ 6,374

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

A. Description of California Institute of Technology

California Institute of Technology (the "Institute") is a private, not-for-profit institution of higher education based in Pasadena, California. Founded in 1891, the Institute provides education and training services, primarily for students at the undergraduate, graduate, and postdoctoral levels, and performs research, training, and other services under grants, contracts, and similar agreements with sponsoring organizations, primarily departments and agencies of the government of the United States of America.

B. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying financial statements include the accounts of the Institute's main campus and satellite facilities ("Campus"), as well as the Jet Propulsion Laboratory ("JPL"), a Federally Funded Research and Development Center managed by the Institute for the National Aeronautics and Space Administration ("NASA").

The Institute manages JPL under a cost-reimbursable contract with NASA. JPL's land, buildings, and equipment are owned by the United States government and are excluded from the Institute's financial statements. Receivables and liabilities arising from JPL's activities are reflected in the Institute's balance sheets. The direct costs of JPL's activities and the related reimbursement of those costs are reflected separately in the statements of activities. The management allowances earned under the NASA contract were $21,000 for each of the years ended September 30, 2017 and 2016 and are included in recovery of indirect costs and allowances in the statements of activities.

The Institute's financial statements have been prepared on the accrual basis of accounting, in accordance with accounting principles generally accepted in the United States of America.

Net Assets

Net assets are classified into three categories according to donor-imposed restrictions or certain provisions of law or accounting standards: permanently restricted, temporarily restricted, and unrestricted.

- Permanently restricted net assets include endowment gifts as well as certain charitable remainder trusts, pooled income funds, gift annuities, other split-interest agreements, and contributions receivable in which donors have stipulated that the original value of their contributions and, if applicable, any subsequent accumulations, be held in perpetuity.

- Temporarily restricted net assets include investment return from permanent endowments that has not been appropriated for expenditures and gifts and related contributions receivable for which donor-imposed restrictions have not been met, including funds restricted for future capital projects, certain charitable remainder trusts, pooled income funds, gift annuities, and other split-interest agreements. These restrictions are expected to be removed through the passage of time, the appropriation of endowment earnings by the Institute, and/or the Institute's incurrence of expenditures or other payments that meet donors' restrictions. Expirations of temporary restrictions on net assets are reported as releases from temporarily restricted to unrestricted net assets in the statements of activities. Donor-restricted gifts that are received and either spent or deemed spent within the same fiscal year are reported as unrestricted revenues.

- Unrestricted net assets are those not subject to donor-imposed restrictions or requirements for classification imposed by law or accounting standards.

Use of Estimates
The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Reclassifications
Certain prior year amounts at September 30, 2016 have been reclassified to conform to the current year presentation.

Redesignations
Net assets related to certain contributions received in prior periods have been transferred among net asset categories due to changes in donor designations. Such redesignations during the years ended September 30, 2017 and 2016, respectively, include $0 and $69,093 transferred from unrestricted net assets to permanently restricted net assets due to endowment funding agreements with donors.

Cash and Cash Equivalents
Cash and cash equivalents include bank account balances, investments in money market funds, and direct short-term investments that have remaining maturities of three months or less when purchased. Bank account balances at September 30, 2017 and 2016 were $6,603 and $6,374, respectively. The Institute classifies all cash and cash equivalents held as part of the investment portfolios as short-term investments. At September 30, 2017 and 2016, short-term investments, as disclosed in Note D, included $273,654 and $146,080, respectively, in cash and cash equivalents. Carrying amounts of cash and cash equivalents approximate fair value due to the relatively short maturities of these instruments.

Under the Institute's cash management system, checks issued by the Institute but not yet cashed by recipients may result in overdraft balances for accounting purposes and are included in accounts payable and accrued expenses in the balance sheets if an overdraft situation exists. There were no overdrafts at September 30, 2017 and 2016.

Accounts and Notes Receivable
Accounts receivable under contracts and grants are carried at cost, less an immaterial allowance for doubtful accounts. Net accounts receivable under contracts and grants totaled $306,191 and $237,643 at September 30, 2017 and 2016, respectively. Activity in the allowance accounts was not significant during the years ended September 30, 2017 and 2016. The carrying value of net accounts receivable approximates fair value.

Accounts receivable from students and employees of $1,499 and $2,136 at September 30, 2017 and 2016, respectively, are carried at cost and approximate fair value. Doubtful accounts are charged to expense when they are deemed to become uncollectible. During the years ended September 30, 2017 and 2016, only minor amounts were written off as uncollectible.

The Institute provides loans to students from both internal funds and from funds provided by the United States government under the Federal Perkins Loan Program. Substantially all student loans that bear interest carry fixed rates, and substantially all student loans carry ten-year terms. Student loans receivable of $6,011 and $6,322 at September 30, 2017 and 2016, respectively, are carried at cost.

The Institute holds all loans to maturity. Loans to students are considered delinquent 10-90 days after a borrower misses a required payment. Delinquent interest-bearing loans continue to accrue interest. At September 30, 2017 and 2016, there were no significant delinquencies on outstanding loans. No allowances have been recorded, and only minor amounts of loans are expected to become uncollectible. The principal credit quality indicator for such loans is collection experience. The Institute manages its credit risk by limiting amounts loaned per term, monitoring aggregate loan levels, and maintaining an active collections process with the assistance of third-party collection agencies as necessary. Student loans generally are not dischargeable in bankruptcy. Loans are not considered uncollectible until all reasonable collection efforts have been made.

Investments

Investments are carried at fair value as discussed in Note K. Purchases and sales of securities are recorded on trade dates, and realized gains and losses are determined based on the average cost of securities sold. Accounts receivable included $348 and $46,205 related to outstanding sales and accounts payable included $3,211 and $1,512 related to outstanding purchases of investments at September 30, 2017 and 2016, respectively.

Short-term investments included $33,899 and $51,811 held by the counterparty to the Institute's interest rate swap at September 30, 2017 and 2016, respectively, as collateral in accordance with the terms of the swap agreement.

Derivatives

The Institute uses an interest rate swap to manage the interest rate exposure of a portion of its variable rate debt. The swap is recorded at fair value, which is the estimated amount that the Institute would receive or pay to terminate the agreement, taking into account current interest rates and the current credit-worthiness of the swap counterparty. Costs of regular settlements with the counterparty of $4,819 and $5,399 during the years ended September 30, 2017 and 2016, respectively, are included in interest expense in the statements of activities. Changes in the swap's fair value during the years ended September 30, 2017 and 2016, resulted in unrealized gains of $20,116 and unrealized losses of $15,112, respectively, which are included in non-operating changes in net assets in the statements of activities. The fair value of the swap was a liability of $50,405 and $70,521 at September 30, 2017 and 2016, respectively, and is included in accounts payable and accrued expenses in the balance sheets.

The Institute also directly transacts in options to manage equity risks of certain investments. The fair value of options is included in investments in the balance sheets and is classified as derivatives in disclosures of investments. Changes in the fair value of options are reported in investment return (loss). The Institute does not designate any derivative instruments as hedging instruments under

Generally Accepted Accounting Principles. Further disclosure of the fair value of derivatives is reported in Note K.

Property, Plant, and Equipment
Property, plant, and equipment is recorded at the cost of construction, acquisition, or the fair value of contributed assets at the date of gift. Interest costs related to debt used for construction of assets are capitalized and included in the cost of construction. Depreciation on all assets subject to depreciation is calculated over the estimated useful lives as defined for each class of depreciable asset, which range from three to fifty years, using the straight-line method. Depreciation on buildings and building improvements is calculated based on the useful lives of each major building component. The Institute provides for the renewal and replacement of assets from various sources set aside for this purpose.

The Institute routinely acquires or constructs equipment under federally and non-federally funded research awards. The costs of such assets for which title does not ultimately transfer to the Institute are charged to expense.

The Institute's conditional asset retirement obligations are primarily related to removal and disposal of asbestos and removal of buildings and improvements from leased property. Asset retirement cost, net of accumulated depreciation, at September 30, 2017 and 2016 was $12,398 and $349, respectively, and is included in property, plant, and equipment in the balance sheets. Conditional asset retirement obligations at September 30, 2017 and 2016 were $26,076 and $13,683, respectively, and are included in accounts payable and accrued expenses in the balance sheets.

Annuity and Trust Agreements
The Institute's split-interest agreements with donors consist primarily of charitable gift annuities and charitable remainder trusts for which the Institute serves as trustee. For irrevocable agreements, assets contributed are included in investments at fair value. Contribution revenue is recognized at the date each trust is established after recording liabilities for the actuarially-determined present value of the estimated future payments to be made to beneficiaries. Actuarial liabilities are discounted at an appropriate credit risk-adjusted rate determined at the inception of each agreement. Discount rates on split-interest agreements range from 1.20% to 11.20% per annum. The liabilities are adjusted during the terms of the agreements for changes in the fair value of the assets, accretion of discounts, and other changes in the estimates of future benefits. The 2012 Individual Annuity Reserving (IAR) table was used for the years ended September 30, 2017 and 2016. Split-interest agreement liabilities totaled $69,117 and $68,537 at September 30, 2017 and 2016, respectively, and are included in liabilities for annuities, trust agreements and agency funds in the balance sheets and classified in Level 3 of the valuation hierarchy described in Note K.

The Institute is also the trustee for certain revocable agreements. Assets contributed are included in Institute investments at fair value, and amounts equal to the value of assets are included in liabilities for annuities, trust agreements, and agency funds in the balance sheets. Total assets and liabilities for revocable agreements were $8,450 and $8,045 at September 30, 2017 and 2016, respectively.

Beneficial Interests
The Institute is the beneficiary of both charitable remainder and perpetual trusts held and administered by others and interests in certain estates bequeathed by donors. The fair value of the Institute's interests in charitable and perpetual trusts is estimated by multiplying the Institute's

percentage interest by the fair value of trust assets at the time that receipt of such interests is both probable and reasonably estimable. The value of the Institute's interests in such trusts is adjusted for changes in the fair values of the underlying assets. Distributions from perpetual trusts are recorded as revenue when contributed by the trustee. Interests in estates are recognized based on estimates of cash flows from estate settlements at the time such cash flows are probable and reasonably estimable. Beneficial interests totaled $48,038 and $73,341 at September 30, 2017 and 2016, respectively, and are included in prepaid expenses and other assets in the balance sheets.

Retirement Plans

The Institute provides a defined contribution retirement program for eligible academic and administrative employees. Contributions to Internal Revenue Code "IRC" Section 403(b) defined contribution plans for the years ended September 30, 2017 and 2016 were $25,637 and $24,614, respectively, for the Campus and $84,911 and $75,918, respectively, for JPL. The Institute has no assets or liabilities related to these plans.

At September 30, 2017 and 2016, respectively, prepaid expenses and other assets included $86,885 and $77,462 in assets held pursuant to IRC section 457 defined contribution retirement plans. These assets are invested with external investment managers and are stated at fair value. The Institute's liabilities related to these funds were $86,368 and $77,277 at September 30, 2017 and 2016, respectively, and are included in accrued compensation and benefits in the balance sheets.

Funds Held for Others

The Institute held assets totaling $14,468 and $13,179 in agency funds at September 30, 2017 and 2016, respectively. The assets held are primarily included in investments in the balance sheets. The corresponding liability, which is equal to assets held, is included in annuities, trust agreements, and agency funds in the balance sheets.

Compensated Absences

Institute employees are entitled to paid vacation based upon length of service and other factors. Certain employees also accrue benefits related to sick leave. The Institute records a liability for these benefits that employees have earned but not yet taken. At September 30, 2017 and 2016, accrued compensated absences of $88,984 and $83,219, respectively, are included in accrued compensation and benefits in the balance sheets. Other compensated absences do not accumulate and are treated as current-period costs.

Workers' Compensation Insurance

The Institute provides workers' compensation insurance to its employees. Liabilities for the Institute's retained risk related to such coverage are determined by an actuary and are included in accrued compensation and benefits in the balance sheets. At September 30, 2017 and 2016, the liabilities for workers' compensation were $10,064 and $9,657, respectively.

Revenue Recognition

The Institute's revenue recognition policies are as follows:

- *Tuition and fees* - Student tuition and fees are recorded as revenues during the year the related academic services are rendered and are displayed net of financial aid on the statements of activities. Tuition and fees totaled $103,963 and $98,835 for the years ended September 30, 2017 and 2016, respectively. Student financial aid totaled $62,621 and $58,021 for the years ended September 30, 2017 and 2016, respectively. Student tuition and fees received in advance of services to be rendered, net of applicable financial aid, are recorded as deferred revenue.

- *Investment return (loss)* - Investment transactions are recorded on the trade date. Investment income and realized and unrealized gains and losses, net of investment management fees, are reported as increases or decreases to the appropriate net asset category.

- *Gifts* - Unconditional promises to give are recorded as revenues in the year received. Non-cash gifts are recorded at fair value using quoted market prices, market prices for similar assets, independent appraisals, or as estimated by Institute management. Gift revenue from contributions to be collected in the form of securities or other investments is adjusted at each year end to reflect the year-end value of securities and/or investments to be contributed.

  Donor-restricted gifts, which are received and either spent, or deemed spent, within the same year are reported as unrestricted revenue. Gifts of long-lived assets with no donor-imposed time restrictions are reported as unrestricted revenue in the year received. Gifts restricted to the acquisition or construction of long-lived assets are reported as temporarily restricted revenue and released to unrestricted net assets when such assets are placed in service. Gifts that are subject to time or other purpose restrictions are reported as temporarily restricted revenue and released to unrestricted net assets when such restrictions are met. Gifts received for endowment investment are held in perpetuity and recorded as permanently restricted revenue.

  Conditional promises to give are not recorded until donor-imposed conditions have been substantially met. Conditional promises to give totaled $65,588 and $69,214 at September 30, 2017 and 2016, respectively. Payments received related to conditional promises totaled $5,609 and $2,538 at September 30, 2017 and 2016, respectively, and are included in deferred revenue and refundable advances in the balance sheets.

- *Grants and contracts* - Revenues from grants and contracts generally are recognized in unrestricted net assets as allowable expenditures are incurred under such agreements. Substantially all United States government grants and contracts awarded to the Campus provide for the reimbursement of indirect facilities and administrative costs based on rates negotiated with the Office of Naval Research, the Campus' federal cognizant agency for the negotiation and approval of facilities and administrative and other indirect cost rates. Costs related to the performance of activities under the JPL contract are reimbursable by NASA. Amounts received in excess of expenditures are recorded as deferred revenue. At September 30, 2017 and 2016, deferred revenue related to grants and contracts was $11,207 and $10,908, respectively.

- *Auxiliary enterprises* - Revenues from supporting services, such as dining facilities, faculty and student housing, and retail stores are recorded at the time of delivery of products or services. Amounts received in advance of deliveries of products or services are recorded as deferred revenue.

(Dollars in Thousands)

Expenses

Expenses are generally reported as decreases in unrestricted net assets. Campus expenses are reported in the statements of activities by natural classification. Campus expenses by functional classification were as follows for the years ended September 30, 2017 and 2016:

	2017	2016
Instruction and academic support	$ 290,222	$ 289,421
Organized research	250,007	237,005
Institutional	77,155	82,168
Auxiliary enterprises	36,386	34,122
Total Campus functional expenses	$ 653,770	$ 642,716

Building and improvements depreciation and plant operation expenses are allocated to functional classifications based on square footage occupancy of Institute facilities. Equipment depreciation is allocated to functional classifications based on average equipment purchases attributed to each classification. Interest expense on external debt, net of amounts capitalized, is allocated to the functional categories that have benefited from the proceeds of such debt.

Operating and Non-operating Activities

The statements of activities report the changes in net assets from the Institute's operating and non-operating activities. Operating activities exclude investment returns/losses in excess/deficit of endowment spending, endowment spending available but not distributed to operations, revenues and releases from restrictions related to gifts for construction, endowments, and annuity and trust agreements, changes in postemployment benefit obligations that are not otherwise recognized in net periodic benefit cost, changes in fair value of interest rate swaps, interest expense related to any bonds issued for which the proceeds have not yet been used for capital projects, to refund other bonds or for operating purposes, gains or losses on disposal of plant, property and equipment, net gains or losses on nonrecurring transactions, actuarial adjustments related to annuity and trust agreements, losses on retirement of indebtedness, and donor redesignations or other reclassifications of net assets.

Tax Status

The Institute is generally exempt from federal taxes on income related to its charitable purpose under the provisions of IRC Section 501(c)(3) and from California and other state income taxes under corresponding state laws. The Institute is subject to both federal and state income taxes on income from certain activities not substantially related to its exempt purpose. At September 30, 2017 and 2016, the Institute maintained a full valuation allowance on its deferred tax assets, which are primarily due to tax losses from certain investment activities. Due to uncertainties surrounding both the timing and amounts of potential future net taxable income, the Institute has concluded that it is more likely than not that the Institute will not realize the deferred tax assets. The Institute has not provided for any uncertain tax positions at September 30, 2017 and 2016.

Related Party Transactions

Members of the Institute's Board of Trustees and senior management may, from time to time, be associated, either directly or indirectly, with entities doing business with the Institute. These transactions are conducted in the normal course of business at an arm's length, and in accordance with the Institute's policies and procedures governing potential conflicts of interest.

Accounting Pronouncements Adopted
In September 2017, the Institute adopted Accounting Standards Update ("ASU") 2015-05, issued by the Financial Accounting Standards Board ("FASB"). ASU 2015-05 clarifies how customers in cloud computing arrangements should divide the costs of such arrangements between capital and expense. There was no material impact to the financial statements as a result of adoption.

In September 2017, the Institute adopted ASU 2014-15, which governs an entity's consideration and disclosure of uncertainties about its ability to continue as a going concern. There was no material impact to the financial statements as a result of adoption.

New Accounting Pronouncements
In May 2014, FASB issued ASU 2014-09 regarding the recognition of revenue from contracts with customers. ASU 2014-09 outlines a single comprehensive standard for revenue recognition across all industries and supersedes most existing revenue recognition guidance. In addition, ASU 2014-09 requires new and enhanced disclosures regarding revenue recognition. ASU 2014-09 is effective for the Institute's fiscal year ending September 30, 2019. The Institute is evaluating the impact this standard will have on its financial statements and disclosures.

In February 2016, FASB issued ASU 2016-02 regarding accounting for leases. ASU 2016-02 requires recognition of rights and obligations arising from lease contracts as assets and liabilities on the balance sheets. ASU 2016-12 is effective for the Institute's fiscal year ending September 30, 2020. The Institute is evaluating the impact this standard will have on its financial statements and disclosures.

In August 2016, FASB issued ASU 2016-14 regarding presentation of financial statements of not-for-profit organizations. Among other requirements, ASU 2016-14 requires additional disclosures regarding the classification of expenses and the liquidity and availability of funds, and modifies the reporting of net assets. ASU 2016-14 is effective for the Institute's fiscal year ending September 30, 2019. The standard will not affect the recognition of financial statement elements. The Institute is evaluating the impact this standard will have on the presentation of the financial statements and disclosures.

In August 2016, FASB issued ASU 2016-15. The standard addresses the classification of certain transactions within the statement of cash flows. ASU 2016-15 is effective for the Institute's fiscal year ending September 30, 2020. The Institute is evaluating the impact this standard may have on its financial statements and disclosures.

In January 2017, FASB issued ASU 2017-02, which clarifies the model used by not-for-profit entities to evaluate the possible consolidation of investments in limited partnerships (and limited liability companies that are similar to limited partnerships). The new standard also affirms the FASB's intent to retain that not-for-profit "portfolio-wide" fair value option under its new investment recognition and measurement rules. ASU 2017-02 is effective for the Institute's fiscal year ending September 30, 2018. The Institute is evaluating the impact this standard may have on its financial statements and disclosures.

(Dollars in Thousands)

In March 2017, FASB issued ASU 2017-07. The standard requires bifurcation of net periodic cost related to postretirement benefits into service cost, which may be included in operations, and other components, which must be reported outside of operations. ASU 2017-07 is effective for the Institute's fiscal year ending September 30, 2020. The Institute is evaluating the impact this standard may have on its financial statements and disclosures.

C. Contributions Receivable, net

Contributions receivable consist of unconditional promises to give to the Institute in the future. Contributions receivable are initially recorded at fair value, including a discount to the present value of the future cash flows at an appropriate credit risk-adjusted rate, and are classified in Level 3 of the valuation hierarchy described in Note K. Discount rates on outstanding contributions at September 30, 2017 and 2016 range from 0.74% to 4.56%.

Contributions receivable are expected to be collected as follows at September 30, 2017 and 2016:

	2017	2016
Within one year	$ 83,132	$ 50,730
Between one year and five years	139,142	125,726
More than five years	42,156	46,540
Gross contributions receivable	264,430	222,996
Less:		
Unamortized discounts	9,978	10,314
Allowance for uncollectible contributions	212	284
Net contributions receivable	$ 254,240	$ 212,398

Net contributions receivable carried the following restrictions at September 30, 2017 and 2016:

	2017	2016
Endowment	$ 183,954	$ 128,806
Other purpose and/or time restrictions	70,286	83,592
Net contributions receivable	$ 254,240	$ 212,398

At September 30, 2017 and 2016, net contributions receivable of $150,151 and $183,631, respectively, were due from board members, their estates, and charitable entities founded by board members.

(Dollars in Thousands)

D. Investments

Investments consisted of the following at September 30, 2017 and 2016:

	2017	2016
Short-term investments	$ 273,900	$ 178,866
Fixed-income securities	177,928	223,353
Equity securities	1,360,432	1,146,711
Alternative investments:		
Alternative securities	812,409	798,994
Private equity	359,458	282,099
Real assets	417,157	400,649
Derivatives, net	(3,216)	(2,294)
Total investments	$ 3,398,068	$ 3,028,378

The Institute engages a number of outside investment managers to manage portions of its investment portfolios, which include an investment pool and other separately managed portfolios.

Below is a description of the holdings included within each investment classification:

- *Short-term investments* consist primarily of cash and cash equivalents invested in prime, U.S. government, and government agency money-market funds, as well as deposits with financial institutions.

- *Fixed-income securities* consist primarily of debt instruments issued by corporate or sovereign entities in both U.S. and foreign markets and investments in funds that hold such instruments.

- *Equity securities* consist primarily of investments in publicly traded corporate equities in globally diversified public markets including domestic, developed international, emerging markets and investments in funds that hold such investments. Investment managers invest according to each manager's particular investment strategy.

- *Alternative securities* consist primarily of investments in funds other than private equity and real assets in which redemption options and/or distributions are determined by the respective investment managers. Alternative securities managers pursue returns through a variety of strategies such as high yield and distressed credit, long/short equity, event-driven, and relative value. Managers invest and trade in various securities and financial instruments, including publicly traded and privately issued common and preferred shares of domestic and foreign companies, corporate debt, bonds, swaps, options, futures contracts and commodities.

- *Private equity* consists of investments in limited partnership interests that invest primarily in the securities of privately held companies. Investment managers utilize leveraged buyout and venture capital strategies in a wide variety of industries and company sizes. Distributions from these investments are made either in-kind as distributions of publicly tradeable equity securities after initial public offerings, or in cash after liquidation of the underlying securities by the investment manager.

(Dollars in Thousands)

- *Real assets* consist primarily of investments in limited partnerships that invest in foreign and/or domestic real estate and/or energy sectors and/or domestic timber industries. Real estate consists primarily of illiquid investments in residential and commercial real estate assets, projects or land, and notes receivable secured by real estate. Such holdings are either held directly or in partnership funds. Energy holdings consist primarily of illiquid investments in oil and gas exploration and production or materials mining businesses, as well as related oil and gas services businesses, held in limited partnerships. Timber holdings consist primarily of illiquid investments in timber land and harvesting businesses held in limited partnerships.

- *Derivatives, net* consist of options in which the Institute directly transacts to manage equity risks of certain investments and interest and currency futures of minor value.

Investments were held as follows at September 30, 2017 and 2016:

	2017	2016
Investment pool	$ 2,613,272	$ 2,193,480
Separately invested endowments	44,306	34,928
Trusts, annuities, and other	740,490	799,970
Total investments	$ 3,398,068	$ 3,028,378

At September 30, 2017 and 2016, endowment investments were $2,641,050 and $2,217,372, respectively. At September 30, 2017, and 2016, other investments included $10,396 and $48,259, respectively, held in separately invested accounts as required by donors and/or sponsors.

Investment return consisted of the following for the years ended September 30, 2017 and 2016:

	2017	2016
Interest and dividend income	$ 47,634	$ 34,322
Net realized (losses)/gains	(10,034)	107,437
Net unrealized gains	363,872	60,140
Total investment return	$ 401,472	$ 201,899

(Dollars in Thousands)

E. Deferred United States Government Billings

The Institute's contract with NASA provides for the reimbursement of certain employee benefit costs incurred but not yet billed to the JPL contract. Therefore, the Institute has recorded deferred United States government billings related to the unfunded postretirement benefit obligation, accrued vacation, and workers' compensation liabilities attributable to JPL, as the Institute is able to recover these amounts through future charges to JPL contracts. Although these deferred billing amounts may not be currently funded, and therefore may need to be funded as part of future NASA budgets, the Institute has the contractual right to require that such funding be made available at the time these employee benefit liabilities become payable by the Institute.

Deferred United States government billings related to deferred reimbursements of the following liabilities at September 30, 2017 and 2016:

	2017	2016
Unfunded postretirement benefit obligation	$ 272,131	$ 300,376
Accrued vacation	71,814	67,046
Accrued worker's compensation expense	3,576	3,956
Total deferred United States government billings	$ 347,521	$ 371,378

F. Property, Plant, and Equipment, net

Property, plant, and equipment consisted of the following at September 30, 2017 and 2016:

	2017	2016
Land and land improvements	$ 70,923	$ 67,799
Buildings and building improvements	1,115,284	1,064,918
Equipment	560,188	577,899
Construction in progress	112,503	70,462
Less: accumulated depreciation	(946,294)	(918,618)
Total property, plant, and equipment, net	$ 912,604	$ 862,460

Depreciation expense for the years ended September 30, 2017 and 2016 was $66,276 and $65,048, respectively.

(Dollars in Thousands)

G. Bonds and Notes Payable

Bonds and notes payable are uncollateralized, general obligations of the Institute and consisted of the following at September 30, 2017 and 2016:

	Maximum	Maturity	Interest rate 2017 / 2016	Outstanding 2017	Outstanding 2016
Bonds payable:					
Taxable bonds:					
Series 2016		2116	4.28%	$ 150,000	$ 150,000
Series 2015		2045	4.32%	400,000	400,000
Series 2011		2111	4.70%	350,000	350,000
California Educational Facilities Authority (CEFA) tax-exempt revenue bonds:					
2006 Series A, with variable rates		2036	0.92% / 0.85%	82,500	82,500
2006 Series B, with variable rates		2036	0.85% / 0.84%	82,500	82,500
Series 1994, with variable rates		2024	0.85% / 0.89%	30,000	30,000
Total bonds payable, gross				1,095,000	1,095,000
Unamortized original issue premiums/discounts and issuance costs, net				(10,935)	(11,128)
Total bonds payable, net				1,084,065	1,083,872
Notes payable:					
Variable rate facilities:					
General working capital and capital projects:					
Bank of America revolving bank credit facility	$ 100,000	2017	1.55% / 0.80%	75,000	70,000
Bank of America revolving bank credit facility	50,000	2017	-	-	-
Bank of New York Mellon money market loan program	50,000	None	-	-	-
JPMorgan Chase revolving bank credit facility	50,000	2017	- / 0.68%	-	1,633
JPMorgan Chase revolving bank credit facility	100,000	2020	1.57% / -	6,200	-
U.S. Bank revolving bank credit facility	50,000	2017	1.45% / 0.84%	50,000	50,000
Wells Fargo revolving bank credit facility	50,000	2020	1.59% / 0.87%	33,633	50,000
Supplemental liquidity for variable rate debt:					
Northern Trust revolving bank credit facility	100,000	2018	-	-	-
Wells Fargo revolving bank credit facility	50,000	2020	-	-	-
Total notes payable				164,833	171,633
Total bonds and notes payable, net				$ 1,248,898	$ 1,255,505

(Dollars in Thousands)

As of September 30, 2017, the Institute had seven unsecured revolving lines of credit available (collectively, the "Lines of Credit"), consisting of six unsecured revolving bank credit facilities and one unsecured revolving money market loan program. The Institute has internally-mandated aggregate borrowing limits under the Lines of Credit as follows: $100,000 for borrowings to finance working capital, $100,000 for borrowings to finance acquisitions of real estate and temporary funding for capital projects, and $200,000 for borrowings secured to preserve liquidity.

The line of credit from Bank of New York Mellon is uncommitted. Maturity dates for individual advances made under this line of credit are determined at the time advances are made.

A JPMorgan Chase revolving bank credit facility with a permitted maximum draw of $50,000 was terminated effective September 30, 2017. There was no outstanding balance at September 30, 2017. A Bank of America revolving bank credit facility with a permitted maximum draw of $50,000 was terminated effective August 31, 2017. There was no outstanding balance at September 30, 2017.

Subsequent to September 30, 2017 the U.S. Bank revolving bank credit facility's permitted maximum draw was increased from $50,000 to $100,000 and the maturity date was extended to 2020.

The Institute is required to comply with financial covenants in certain line of credit agreements, including maintaining minimum ratios of unrestricted cash and investments to total adjusted debt outstanding. As of September 30, 2017, the Institute was in compliance with all of its required financial covenants.

Under certain circumstances, the CEFA Series 1994, 2006 Series A, and 2006 Series B variable rate revenue bonds, which have contractual maturities commencing in 2024, could fail to be remarketed, requiring the Institute to repurchase the outstanding bonds totaling approximately $195,000. Therefore, those bonds have been classified as repayable in the year ending September 30, 2017 in the following table.

Future principal repayments on bonds and notes payable were as follows at September 30, 2017:

Year Ending September 30	Amount
2018	$ 359,833
2019	-
2020	-
2021	-
2022	-
Thereafter	900,000
Total	$ 1,259,833

(Dollars in Thousands)

As disclosed in Note B, the Institute uses an interest rate swap to manage the interest rate exposure of the 2006 Series A and B variable rate revenue bonds. Under the terms of the agreement, which expires October 1, 2036, the Institute pays the counterparty a fixed interest rate of 3.549% and receives a variable rate, indexed at 67% of one-month LIBOR (0.83% at September 30, 2017), on a $165,000 underlying notional principal amount.

In September 2016, the Institute issued $150,000 in Series 2016 taxable bonds. At the issuance date, the Institute deposited $91,600 of the proceeds in an escrow fund to purchase noncallable notes, bills, and bonds issued by the U.S. Department of the Treasury to be held in trust to provide for interest and principal payments to the holders of the Institute's $80,000 in CEFA 2009 Series tax-exempt revenue bonds ("2009 Bonds") until the 2009 Bonds' planned redemption in 2019. This advance refunding legally defeased the 2009 Bonds and resulted in a loss on retirement of debt of $10,158, which is reflected in non-operating changes in unrestricted net assets in the statement of activities.

H. Temporarily and Permanently Restricted Net Assets

Temporarily restricted net assets were available for the following purposes at September 30, 2017 and 2016:

	2017	2016
Educational and research funds	$ 105,917	$ 137,843
Contributions receivable	70,286	83,592
Capital projects	828	962
Life income and annuity funds	30,263	30,364
Endowments	650,262	513,627
Total temporarily restricted net assets	$ 857,556	$ 766,388

Permanently restricted net assets were available for the following purposes at September 30, 2017 and 2016:

	2017	2016
Student loan funds	$ 18,723	$ 18,317
Contributions receivable	183,954	128,806
Life income and annuity funds	54,617	87,249
Endowments	1,369,863	1,202,731
Total permanently restricted net assets	$ 1,627,157	$ 1,437,103

I. Endowment

Endowment net assets are comprised of donor-restricted and board-designated funds held for long-term investment that support educational, research, and general operating activities of the Institute. All endowment assets are held in the investment pool unless special considerations or donor stipulations require that they be invested separately. Gift annuities, beneficial interests, contributions receivable, and unexpended endowment distributions that are subject to remaining purpose restrictions are not considered endowment net assets.

Pursuant to its interpretation of the Uniform Prudent Management of Institutional Funds Act (“UPMIFA”) as enacted in California, the Institute classifies the following as permanently restricted net assets: the original value of initial gifts to permanent endowments, the original value of subsequent gifts to permanent endowments, and the value of accumulations to permanent endowments made in accordance with the applicable donor gift instrument at the time the accumulation is added to the fund. The remaining portions of donor-restricted endowment funds that are not classified as permanently restricted net assets are classified as temporarily restricted net assets until those amounts are appropriated for expenditure by the Institute in a manner consistent with the standard of prudence prescribed by UPMIFA and Institute policies and expended accordingly.

The Institute’s endowment spending policy includes a Board of Trustees-approved endowment spending formula which takes into consideration the prior year’s spending, inflation factors, and endowment growth. In addition, in accordance with UPMIFA, when determining the annual amount to be made available for distribution to the operating budget each year, the Board of Trustees also considers the following factors:

- The purpose of each donor-restricted endowment fund
- The duration and preservation of each fund
- General economic conditions
- The possible effects of inflation and deflation
- The expected total return from income and the appreciation of investments
- Other resources of the Institute
- The investment policies of the Institute

Any excess of endowment spending over current-year investment income and gains (losses) is funded by prior years’ accumulated investment return. The Institute appropriates endowment funds for expenditures based on current spending rates and, if applicable, the incurrence of specific expenditures in accordance with donors’ purpose restrictions.

The Institute invests endowment assets targeted to earn an average annual total return that exceeds inflation by at least the amount required to support the endowment spending. Total return includes both capital appreciation/depreciation (realized and unrealized gains/losses) and investment income (including interest, dividends, and royalties). The Institute targets a diversified asset allocation, including investments in both public markets and in alternative investments, within risk constraints deemed to be prudent.

The portion of endowment available for spending that is transferred to operating accounts each year is shown as endowment spending distributed in the statements of activities. Any endowment spending available for expenditure but not distributed remains invested in the Institute's endowment and is included in non-operating changes to net assets in the statements of activities.

(Dollars in Thousands)

Endowment net assets consisted of the following at September 30, 2017 and 2016:

September 30, 2017	**Unrestricted**	**Temporarily Restricted**	**Permanently Restricted**	**Total**
Donor-restricted endowment funds	$ (18,406)	$ 631,296	$ 1,369,863	$ 1,982,753
Board-designated endowment funds	636,457	18,966	-	655,423
Total endowment net assets	$ 618,051	$ 650,262	$ 1,369,863	$ 2,638,176
September 30, 2016				
Donor-restricted endowment funds	$ (41,121)	$ 507,063	$ 1,202,731	$ 1,668,673
Board-designated endowment funds	576,183	6,564	-	582,747
Total endowment net assets	$ 535,062	$ 513,627	$ 1,202,731	$ 2,251,420

Changes in endowment net assets for the years ended September 30, 2017 and 2016 were as follows:

	Unrestricted	**Temporarily Restricted**	**Permanently Restricted**	**Total**
October 1, 2015	$ 571,466	$ 501,386	$ 1,041,757	$ 2,114,609
Investment return:				
Investment income	9,544	12,925	110	22,579
Net appreciation in market value	58,380	79,179	673	138,232
Total investment return	67,924	92,104	783	160,811
Contributions and pledge payments	-	734	91,372	92,106
Additions to board-designated endowments	24,985	-	-	24,985
Available for expenditure	(57,334)	(72,736)	(652)	(130,722)
Redesignations, reclassifications, and other	(71,979)	(7,861)	69,471	(10,369)
September 30, 2016	$ 535,062	$ 513,627	$ 1,202,731	$ 2,251,420
Investment return:				
Investment income	10,908	21,464	755	33,127
Net appreciation in market value	102,094	200,883	7,075	310,052
Total investment return	113,002	222,347	7,830	343,179
Contributions and pledge payments	-	400	153,823	154,223
Additions to board-designated endowments	24,800	12,000	-	36,800
Available for expenditure	(47,796)	(92,679)	(783)	(141,258)
Redesignations, reclassifications, and other	(7,017)	(5,433)	6,262	(6,188)
September 30, 2017	$ 618,051	$ 650,262	$ 1,369,863	$ 2,638,176

(Dollars in Thousands)

Redesignations, reclassifications, and other includes the effects of changes in donor restrictions or Institute designations and certain endowment management costs.

Under Accounting Standards Codification 958, for accounting purposes the Institute must maintain the historical values of donor-restricted endowment funds as permanently restricted net assets even in cases where the fair values of those funds are less than historical values. Such deficits are recorded as reductions of unrestricted net assets. The aggregate deficits for such funds were $16,246 and $34,336 at September 30, 2017 and 2016, respectively, and are recorded in unrestricted net assets. Such deficits reverse with market value appreciation. Reversals of these deficits increase unrestricted net assets.

J. Postretirement and Postemployment Benefits

The Institute provides postretirement health and life insurance benefit plans to eligible retirees and their dependents. The Institute's obligation related to these benefits is actuarially determined based on a September 30 measurement date. The Institute also provides defined contribution retirement plans, which are described in Note B.

Components of the funded status of postretirement benefits reported in the Institute's balance sheets and changes therein were as follows for the years ended September 30, 2017 and 2016. Additional detail regarding the JPL and Campus-related portions of the funded status of postretirement benefits is provided at the end of this note.

	2017	**2016**
Change in the accumulated postretirement benefit obligation:		
Benefit obligation at beginning of year	$ 460,339	$ 400,995
Service cost	12,486	10,375
Interest cost	17,147	18,019
Benefits paid	(14,373)	(14,275)
Actuarial (gain)/loss	(8,903)	45,225
Benefit obligation at end of year	466,696	460,339
Changes in plan assets:		
Fair value of plan assets at beginning of year	44,629	21,243
Return on plan assets	6,631	3,080
Employer contributions	35,679	34,581
Benefits paid	(14,373)	(14,275)
Fair value of plan assets at end of year	72,566	44,629
Funded status	$ (394,130)	$ (415,710)

Benefits for campus retirees and their dependents are funded on a pay-as-you-go basis. Benefits for JPL retirees and their dependents are funded by NASA according to an accrual accounting approach based on the Federal Acquisition Regulation. JPL-related contributions in excess of benefits paid are held in a trust for the benefit of JPL retirees and are invested according to the related plan's investment policies. At September 30, 2017 and 2016, trust investments consisted of short-term investments and non-publicly traded collective trust funds and mutual funds. Short-term investments are classified in level 1 of the valuation hierarchy described in Note K, and the collective trust funds and mutual funds, which have readily determinable fair values, are classified within level 2 of that hierarchy.

(Dollars in Thousands)

Trust investments were held as follows at September 30, 2017 and 2016:

	2017	2016
Short-term investments	$ 366	$ 223
Collective trust funds	21,873	13,395
Mutual funds	50,327	31,011
Total	$ 72,566	$ 44,629

Net periodic postretirement benefit cost was as follows for the years ended September 30, 2017 and 2016:

	2017	2016
Components of net periodic postretirement benefit cost:		
Service cost	$ 12,486	$ 10,375
Interest cost	17,147	18,019
Expected return on plan assets	(3,131)	(1,683)
Amortization of prior year service credit	(26,305)	(28,188)
Amortization of loss	6,958	4,544
Net periodic benefit cost	$ 7,155	$ 3,067

The statements of activities include the effects of changes in funded status that are not otherwise recognized in net periodic postretirement benefit cost. The effect related to JPL for the years ended September 30, 2017 and 2016 was a decrease of $28 and an increase of $47,613, respectively, in both JPL direct expense and revenue and in deferred U.S. government billings, as any cost associated with this adjustment related to JPL is contractually recoverable from NASA. The effect of those changes for the Campus was a decrease of $6,972 and $19,859 in unrestricted net assets for the years ended September 30, 2017 and 2016, respectively, and is recorded in non-operating changes in unrestricted net assets in the statements of activities.

(Dollars in Thousands)

At September 30, 2017 and 2016, the differences recognized in unrestricted net assets between cumulative net periodic postretirement benefit cost, less cumulative contributions, and funded status were as follows:

	2017	2016
Amounts recognized in unrestricted net assets:		
Prior service credit	$ (38,007)	$ (44,384)
Net loss	30,250	29,655
Cumulative amounts recognized in unrestricted net assets	$ (7,757)	$ (14,729)

Any actuarial deferrals resulting from changes in the accumulated postretirement benefit obligation are amortized over the average future working lifetime of Institute employees. An estimated prior service credit of $26,305 and actuarial loss of $5,532 will be amortized into net periodic benefit cost during the year ending September 30, 2018.

The following weighted-average assumptions were used to determine the Institute's net periodic benefit cost under the plans for the years ended September 30, 2017 and 2016:

	2017	2016
Discount rate	3.80%	4.60%
Discount rate for service cost	4.10%	4.80%
Expected return on plan assets	5.75%	5.75%
Health care cost trend rate	7.50%	7.50%

To develop the expected long-term rates of return on assets noted above, the Institute considers the historical returns and future expectations for each asset class, as well as the asset allocation of the retirement plan's investment portfolio. Estimated future return was based on expected returns for various asset categories. The evaluation of the historical and future returns resulted in the selection of 5.75% for the expected return on plan assets.

The following weighted-average assumptions were used to determine the Institute's obligation under the plans at September 30, 2017 and 2016:

	2017	2016
Discount rate	4.00%	3.80%
Discount rate for service cost	4.10%	4.10%
Health care cost trend rate	7.25%	7.50%

The Institute's postretirement medical benefit plans provide a substantial portion of the Institute's retirees and their eligible dependents awards of defined-dollar credits that are available to be used by retirees for medical premiums and other eligible medical expenses. The defined-dollar credits may be changed in future years at the Institute's discretion. Certain grandfathered retirees and eligible dependents remain eligible for future medical benefits at no cost through an Institute-sponsored plan. The cost of these benefits is expected to increase in the future according to health care cost trend rates. The assumed health care cost trend rate is 7.25% in 2018, and annual rates are assumed to decrease approximately 0.25% per year until 2029, after which healthcare cost is assumed to increase 4.25% in all future years.

(Dollars in Thousands)

A one-percentage point change in assumed health care cost trend rates would have the following effects:

	1% Increase	1% Decrease
Effect on the total of service and interest cost components	$ 51	$ (44)
Effect on accumulated postretirement benefit obligation	$ 986	$ (871)

A substantial majority of the above effects would be related to JPL and therefore would result in corresponding changes in amounts expected to be recoverable from NASA.

At September 30, 2017, the estimated future benefit payments are as follows:

Year Ending September 30	Campus	JPL	Total
2018	$ 4,510	$ 13,936	$ 18,446
2019	4,652	13,943	18,595
2020	4,909	14,370	19,279
2021	5,210	14,995	20,205
2022	5,256	14,977	20,233
2023-2027	30,160	82,402	112,562

Additional detail regarding the JPL and Campus-related portions of the funded status of postretirement benefits and changes therein for the years ended September 30, 2017 and 2016, is as follows:

	Campus	JPL	Total
September 30, 2017			
Benefit obligation at end of year	$ 121,998	$ 344,698	$ 466,696
Fair value of plan assets at end of year	-	72,566	72,566
Funded status	$ (121,998)	$ (272,132)	$ (394,130)
September 30, 2016			
Benefit obligation at end of year	$ 115,334	$ 345,005	$ 460,339
Fair value of plan assets at end of year	-	44,629	44,629
Funded status	$ (115,334)	$ (300,376)	$ (415,710)

K. Fair Value

Fair value is defined as the price that the Institute would receive upon selling an asset or would pay to settle a liability in an orderly transaction between market participants. The Institute evaluates the fair value of financial instruments using an established hierarchy that ranks the inputs to valuation techniques used to measure fair value. Inputs refer broadly to the assumptions that market participants would use in such fair value determinations, including assumptions regarding various risks. A financial instrument's level within the fair value hierarchy is based on the least-transparent level of any input that is significant to the fair value measurement. The classification of financial instruments within the hierarchy is based upon the transparency of the inputs to valuation techniques used to measure fair value and does not necessarily correspond to the Institute's perceived risk of those instruments. The three levels of the fair value hierarchy are described below.

Level 1 fair value measurements are based upon unadjusted quoted prices for identical assets or liabilities in active, accessible markets. Market price data is generally obtained from exchange dealer markets.

Level 2 fair value measurements are generally based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market or can be corroborated by observable market data for substantially the full term of the instruments. Inputs to Level 2 measurements include, but are not limited to, interest rates, credit risk adjustments, and prices for similar instruments, and are obtained from various sources, including market participants, dealers, and brokers.

Level 3 fair value measurements are those that use significant inputs that are unobservable. Assets and liabilities included in Level 3 primarily consist of investments in real assets that are valued by investment managers or the Institute using industry-standard methodologies, independent appraisals, and Institute models. The Institute regularly monitors the adequacy of these fair value measurements. Fair value measurements derived using specific unobservable quantitative inputs developed by the Institute were not significant for the years ended September 30, 2017 and 2016.

The Institute generally uses net asset value ("NAV") as a practical expedient to determine the fair value of investments in funds that do not have readily determinable fair values and either have certain specific attributes of investment companies or prepare their financial statements consistent with the measurement principles of investment companies. For these funds, net asset values are determined by each fund's general partner or investment manager and are based on appraisals or other estimates that include considerations such as the cost of the fund's securities, prices of recent significant placements of securities of the same issuer, and subsequent developments concerning the companies to which the securities relate. The fair value of investments valued at NAV as a practical expedient are excluded from the fair value hierarchy.

(Dollars in Thousands)

The following is a summary of the fair value of the Institute's financial instruments according to fair value level or NAV at September 30, 2017 and 2016:

	Level 1	Level 2	Level 3	NAV	2017 Total
September 30, 2017					
Investments:					
Short-term investments	$ 273,900	$ -	$ -	$ -	$ 273,900
Fixed-income securities	30,352	147,576	-	-	177,928
Equity securities	665,295	194,536	25,118	475,483	1,360,432
Alternative investments:					
Alternative securities	-	-	-	812,409	812,409
Private equity	-	-	24,392	335,066	359,458
Real assets	-	18,158	172,656	226,343	417,157
Derivative assets	1,492	-	-	-	1,492
Derivative liabilities	(4,708)	-	-	-	(4,708)
Total investments	$ 966,331	$ 360,270	$ 222,166	$1,849,301	$3,398,068
Other assets and liabilities:					
Cash and cash equivalents	$ 6,603	$ -	$ -	$ -	$ 6,603
Beneficial interests	-	-	48,038	-	48,038
Defined contribution plan assets	33,242	25,352	28,291	-	86,885
Defined contribution plan liabilities	(32,792)	(25,295)	(28,281)	-	(86,368)
Interest rate swap	-	(50,405)	-	-	(50,405)

	Level 1	Level 2	Level 3	NAV	2016 Total
September 30, 2016					
Investments:					
Short-term investments	$ 178,866	$ -	$ -	$ -	$ 178,866
Fixed-income securities	30,749	192,604	-	-	223,353
Equity securities	602,132	163,759	6,246	374,574	1,146,711
Alternative investments:					
Alternative securities	-	-	-	798,994	798,994
Private equity	-	-	5,537	276,562	282,099
Real assets	-	18,792	131,597	250,260	400,649
Derivative assets	2,242	-	-	-	2,242
Derivative liabilities	(4,536)	-	-	-	(4,536)
Total investments	$ 809,453	$ 375,155	$ 143,380	$1,700,390	$3,028,378
Other assets and liabilities:					
Cash and cash equivalents	$ 6,374	$ -	$ -	$ -	$ 6,374
Beneficial interests	-	-	73,341	-	73,341
Defined contribution plan assets	26,916	24,147	26,399	-	77,462
Defined contribution plan liabilities	(26,827)	(24,062)	(26,388)	-	(77,277)
Interest rate swap	-	(70,521)	-	-	(70,521)

(Dollars in Thousands)

The fair value of assets held in trust for postretirement benefit plans, as disclosed in Note J, is excluded from the tables above.

At September 30, 2017 and 2016, additional detail regarding the Institute's investments valued using NAV by major investment category was as follows:

	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period in days	Lives in years
September 30, 2017					
Equity securities					
Quarterly or less	$ 183,477	$ -	Quarterly or less	7 to 180	-
Greater than quarterly	291,490	5,308	Annually to triennially	60 to 120	-
Not actionable	516	-	Not actionable	-	-
Alternative investments:					
Alternative securities					
Quarterly or less	120,671	-	Quarterly or less	60 to 90	-
Greater than quarterly	467,718	-	Semi-annually to triennially	30 to 90	-
Not actionable	224,020	146,274	Not actionable	-	up to 17
Private equity	335,066	195,441	Not actionable	-	up to 10
Real assets	226,343	84,958	Not actionable	-	up to 10
Total investments	$ 1,849,301	$ 431,981			

	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period in days	Lives in years
September 30, 2016					
Equity securities					
Quarterly or less	$ 120,086	$ -	Quarterly or less	7 to 180	-
Greater than quarterly	253,972	-	Annually to triennially	60 to 120	-
Not actionable	516	-	Not actionable	-	-
Alternative investments:					
Alternative securities					
Quarterly or less	186,065	-	Quarterly or less	60 to 90	-
Greater than quarterly	414,023	750	Semi-annually to triennially	30 to 90	-
Not actionable	198,906	112,195	Not actionable	-	up to 17
Private equity	276,562	164,629	Not actionable	-	up to 10
Real assets	250,260	77,559	Not actionable	-	up to 10
Total investments	$ 1,700,390	$ 355,133			

(Dollars in Thousands)

In addition to the unfunded commitments noted above, at September 30, 2017 and 2016, the Institute was committed to invest an additional $62,955 and $54,789, respectively, in investments classified within the fair value hierarchy over approximately the next ten years.

The methods described above may produce fair value calculations that may not be indicative of net realizable value or reflective of future fair values. Alternative investments may not be readily marketable or redeemable, and may specify penalties for early withdrawal from the related funds. Furthermore, while the Institute believes its valuation methods are appropriate and consistent with those of other market participants, the use of different methodologies or assumptions to determine fair values of certain financial instruments could result in different estimates of fair value.

The following table is a summary of changes in the fair values of the Institute's Level 3 assets for the years ended September 30, 2017 and 2016:

	Beginning Balance	Gifts and Purchases	Sales and Maturities	Realized Gain/Loss	Unrealized Gain/Loss	Ending Balance
September 30, 2017						
Investments:						
Equity securities	$ 6,246	$ 17,933	$ (2,197)	$ 2,158	$ 978	$ 25,118
Alternative investments:						
Private equity	5,537	14,033	-	-	4,822	24,392
Real assets	131,597	63,325	(27,050)	(13,870)	18,654	172,656
Total investments	$ 143,380	$ 95,291	$ (29,247)	$ (11,712)	$ 24,454	$ 222,166
Other assets:						
Beneficial interests	$ 73,341	$ 19,339	$ (40,511)	$ -	$ (4,131)	$ 48,038
Defined contribution plans	26,398	5,341	(4,242)	-	794	28,291

	Beginning Balance	Gifts and Purchases	Sales and Maturities	Realized Gain/Loss	Unrealized Gain/Loss	Ending Balance
September 30, 2016						
Investments:						
Equity securities	$ 6,245	$ -	$ (41)	$ -	$ 42	$ 6,246
Alternative investments:						
Private equity	-	4,000	-	-	1,537	5,537
Real assets	143,102	13,366	(11,819)	1,650	(14,702)	131,597
Total investments	$ 149,347	$ 17,366	$ (11,860)	$ 1,650	$ (13,123)	$ 143,380
Other assets:						
Beneficial interests	$ 22,379	$ 72,453	$ (22,059)	$ -	$ 568	$ 73,341
Defined contribution plans	23,490	4,099	(2,001)	-	811	26,399

The Institute classifies defined contribution plan liabilities in the fair value hierarchy based upon the investments of the related plan assets. Accordingly, liabilities classified within Level 3 approximate the value of plan investments that also are classified within Level 3, and increase or decrease in value according to contributions, withdrawals, vesting, and investment performance.

(Dollars in Thousands)

The Institute records transfers between levels in the current fiscal year when there is a change in circumstances that affects the liquidity of the assets and/or the ability to observe and measure the fair value. The Institute records such transfers based on the market value at the beginning of the reporting period. There were no transfers among levels during the years ended September 30, 2017 and 2016. During the years ended September 30, 2017 and 2016, unrealized losses related to Level 3 assets of ($4,308) and unrealized gains of $418 respectively, were recorded in non-operating gifts and pledges in the statements of activities. All other realized and unrealized gains related to Level 3 investments were recorded in non-operating investment return in excess of payout in the statement of activities. Unrealized gains and losses included in the statements of activities related to those Level 3 assets held at September 30, 2017 and 2016 were $5,107 and ($12,813), respectively.

The Institute uses an interest rate swap to manage the interest rate exposure of a portion of its variable rate debt. 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. The interest rate swap is valued using observable inputs, such as quotations received from counterparties, dealers, or brokers, market prices for reference securities, credit curves, and assumptions for nonperformance risk, whenever available and considered reliable, and is therefore classified in Level 2 of the fair value hierarchy.

The Institute uses exchange-traded equity derivatives, including put and call options, to manage its market exposure related to certain equity exchange-traded funds. Balances and activities related to equity derivatives for the years ended September 30, 2017 and 2016 were as follows:

	2017	2016
Investments:		
Gross derivative assets	$ 1,492	$ 2,242
Gross derivative liabilities	(4,708)	(4,536)
Net amount	$ (3,216)	$ (2,294)
Notional value: assets	$ 88,825	$ 95,947
Notional value: liabilities	(182,950)	(195,957)
Investments pledged	106,658	111,423
Investment returns/(losses):		
Realized (losses)/gains	$ (6,070)	$ 1,451
Unrealized losses	(1,352)	(5,926)
Net amount	$ (7,422)	$ (4,475)

L. Commitments and Contingencies

Contingencies

The Institute receives funding or reimbursement from agencies of the United States government for various activities that are subject to audit, and is a defendant in various legal actions incident to the conduct of its activities. Except as specifically discussed below, management does not expect that liabilities, if any, related to these audits or legal actions will have a material impact on the Institute's financial position. However, the settlement of audits or legal actions is subject to inherent uncertainties, and it is possible that such liabilities, if any, will differ materially from management's current expectations.

In 1997, the Institute was named as a potentially responsible party ("PRP") by NASA under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended. As a PRP, the Institute may be jointly liable for contribution towards clean-up costs, estimated to be in excess of $100,000, of the NASA/JPL Superfund site.

Officials of the Institute presently are not able to predict the impact, if any, that final resolution of this matter will have on the Institute's financial position or changes in its net assets. However, the Institute believes that it will have recourse to the United States government for any liabilities it may incur in connection with being named a PRP for that site.

Commitments

The Institute was committed under certain construction and services contracts in the amounts of approximately $130,940 and $81,074 at September 30, 2017 and 2016, respectively.

The Institute is a member of an international consortium that was organized to construct and operate an advanced telescope. At September 30, 2017 and 2016, the Institute was committed to provide cash totaling approximately $67,000 and $92,000, respectively, to the consortium over approximately the next seven years. Payments and other transfers related to this commitment are subject to certain contingencies.

The Institute's workers' compensation insurance carrier requires that the Institute maintain an unsecured letter of credit for claims that do not exceed certain deductible amounts. At September 30, 2017 and 2016, the amounts of the letter of credit facility were $8,800 and $9,400, respectively. The letter of credit was not used during the years ended September 30, 2017 and 2016, and therefore no liability has been recorded in the balance sheets.

The Institute is currently providing funding for the operation of certain local water treatment facilities, subject to reimbursement from NASA. Annual costs are not expected to exceed $9,000.

The Institute leases equipment and buildings, primarily for JPL, under operating leases expiring at various dates through 2022. Rent expense incurred under operating lease obligations was $10,315 and $6,684 for the years ended September 30, 2017 and 2016, respectively.

(Dollars in Thousands)

At September 30, 2017, future minimum payments under operating leases of greater than one year in duration were as follows:

Year Ending September 30	Amount
2018	$ 3,458
2019	2,486
2020	1,004
2021	537
2022	18
Total	$ 7,503

Approximately $7,185 of the future minimum lease payments listed above is expected to be recoverable from JPL under the Institute's cost-reimbursable contract with NASA.
The Institute rents housing, equipment, and building space to students, faculty, and other organizations under operating leases expiring at various dates through 2022. Rental income under operating leases was $9,098 and $9,421 at September 30, 2017 and 2016, respectively.

At September 30, 2017, minimum future rentals from operating leases of greater than one year in duration were as follows:

Year Ending September 30	Amount
2018	$ 7,017
2019	3,705
2020	2,624
2021	2,619
2022	2,530
Total	$ 18,495

(Dollars in Thousands)

M. Supplemental Cash Flow Information

The following are additional supplemental disclosures related to the statements of cash flows:

	2017	2016
Cash paid during the year for interest, net of amounts capitalized	$ 46,403	$ 45,541
Non-cash investing and financing activities:		
Securities received to satisfy pledge payments	56,629	41,698
Securities and real estate received from beneficial interests	29,369	7,929
In-kind receipt of securities, property, plant, and equipment	3,944	12,051
Increase in accrued purchases of property, plant, and equipment	5,480	2,364
Decrease/(increase) in net amounts payable/receivable for pending investments transactions	47,556	(13,525)
Increase in conditional asset retirement costs and obligations	12,278	-

N. Subsequent Events

Subsequent events were evaluated through January 24, 2018, which is the date the financial statements were available to be issued.

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Research and Development Cluster				
Direct Funds				
Department of Commerce				
National Oceanic & Atmospheric Administration	11.431		$ 108,187	$ -
Department of Defense				
Air Force	12.800		4,711,603	720,553
Army	12.420		6,194	-
Army	12.431		2,794,023	689,346
Army	12.910		883,432	413,478
Defense Threat Reduction Agency	12.351		275,630	-
Defense Advanced Research Project Agency	12.910		8,324,123	1,829,713
Navy	12.300		6,818,693	29,792
Space and Naval Warfare System	12.910		430,701	-
Total Department of Defense			24,244,399	3,682,882
Department of Energy				
Department of Energy	81.RD	IPA FLOOD	113,328	-
Department of Energy	81.049		17,839,527	2,457,538
Department of Energy	81.064		(910)	-
Department of Energy	81.087		371,552	-
Department of Energy	81.112		977,693	471,428
Department of Energy	81.117		74,077	-
Department of Energy	81.135		1,203,230	430,759
Total Department of Energy			20,578,497	3,359,725

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Research and Development Cluster (Continued)				
Direct Funds (Continued)				
Department of Health and Human Services				
National Institutes of Health	93.077		$ 758,995	$ -
National Institutes of Health	93.121		500,601	-
National Institutes of Health	93.172		5,722,046	2,744,777
National Institutes of Health	93.173		281,285	159,122
National Institutes of Health	93.242		5,568,733	91,153
National Institutes of Health	93.279		1,952,699	263,317
National Institutes of Health	93.286		705,357	247
National Institutes of Health	93.310		2,903,283	606,558
National Institutes of Health	93.351		317,877	-
National Institutes of Health	93.396		322,044	84,014
National Institutes of Health	93.397		2,564,612	1,234,080
National Institutes of Health	93.398		47,420	-
National Institutes of Health	93.837		12,560	-
National Institutes of Health	93.838		1,286,199	-
National Institutes of Health	93.839		623,480	105,679
National Institutes of Health	93.846		54,950	-
National Institutes of Health	93.847		1,144,393	-
National Institutes of Health	93.853		9,128,791	1,586,055
National Institutes of Health	93.855		7,624,125	2,233,821
National Institutes of Health	93.859		16,484,221	581,112
National Institutes of Health	93.865		4,839,838	878,041
National Institutes of Health	93.866		480,735	195,584
National Institutes of Health	93.867		994,010	-
National Institutes of Health	93.879		13,478	-
National Institutes of Health	98.853		7,909	-
Total Department of Health and Human Services			64,339,641	10,763,560

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Research and Development Cluster (Continued)				
Direct Funds (Continued)				
Department of the Interior				
United States Geological Survey	15.RD	4500047679	$ 33,488	$ -
United States Geological Survey	15.RD	4500072148	82,851	-
United States Geological Survey	15.RD	IPA GOOD	1,972	-
United States Geological Survey	15.807		3,434,340	-
United States Geological Survey	15.808		574,925	-
Total Department of the Interior			4,127,576	-
National Aeronautics and Space Administration (NASA)				
NASA	43.RD	JSCNNJ13ZA01P	166,854	-
NASA	43.RD	NNG08FD60C	3,615,200	1,870,349
NASA	43.RD	NNG16FC11C	13,499	-
NASA	43.RD	NNH14IA13P	207,814	-
NASA	43.RD	NNH15IA26P	85,763	-
NASA	43.RD	NNH17IA19P	46,342	-
NASA	43.RD	NNX16AQ81G	38,631	-
NASA	43.001		8,771,275	1,111,402
NASA	43.007		57,233	-
NASA	43.008		(530)	-
NASA	43.009		(22,477)	-
NASA	43.012		703,073	-
Total NASA			13,682,677	2,981,751

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Research and Development Cluster (Continued)				
Direct Funds (Continued)				
National Science of Foundation				
National Science Foundation	47.RD	1501208	$ 457	$ -
National Science Foundation	47.RD	1559413	31,250	-
National Science Foundation	47.041		1,704,131	216,039
National Science Foundation	47.049		66,933,459	6,905,804
National Science Foundation	47.050		4,110,796	30,635
National Science Foundation	47.070		3,513,163	-
National Science Foundation	47.074		1,666,569	9,369
National Science Foundation	47.075		654,894	78,104
National Science Foundation	47.076		4,498,485	-
National Science Foundation	47.079		14,700	-
National Science Foundation	47.080		(960)	-
ARRA - National Science Foundation	47.083		901,073	97,575
Total National Science Foundation			84,028,017	7,337,526
Total Research and Development - Direct Funds			211,108,994	28,125,444
Pass-Through Funds				
Department of Agriculture				
Citrus Research and Development Foundation, Inc	10.309	13-009NU-788	668,437	199,725
Tanner Research, Inc.	10.212	CTSub-USDA 17-00500	36,366	-
Total Department of Agriculture Pass-Through			704,803	199,725

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
Department of Defense				
Air Force				
Applied Optronics	12.800	AOC-FA9550-17-C-0002	$ 75,000	$ -
Brown University	12.800	00000553	136,417	-
Carnegie Mellon University	12.800	1150119-294707	151,105	-
Global Aerospace Corporation	12.800	GAC.HEAT	36,020	-
Massachusetts Institute of Technology	12.800	5710003606	109,890	-
Stanford University	12.800	29018150-51649-C	(9,434)	-
The Ohio State University	12.800	60059575	33,188	-
The University of Chicago	12.800	FP057123-A	159,965	-
University of California Berkeley	12.800	00007817	13,104	-
University of California Los Angeles	12.800	0205GSA600	99,386	-
University of California Los Angeles	12.800	W911NF-17-0402	51,658	-
University of California San Diego	12.800	10312818	(786)	-
University of California Santa Barbara	12.800	KK1224	63,678	-
University of Colorado at Boulder	12.800	1552227	201,361	-
University of Illinois	12.800	088337-16355	45,705	-
University of Maryland	12.800	42700-Z8183001	294,260	-
Total Air Force Pass-Through			1,460,517	-
Army				
Applied Optronics	12.400	W911NF-0003	45,998	-
Cornell University	12.910	63222-9803	14,538	-
Hqphotonics, Inc	12.RD	hQp00001	57,502	-
Johns Hopkins University	12.630	2001515018	789,604	-
Next Dimension Technologies	12.RD	NDT.AROSTTR	50,000	-
Synvitrobio	12.RD	SVB-CIT-1-2015	15,106	-
Synvitrobio	12.RD	SVB-CIT-1-2016	82,586	-
Telaris Genesis, Inc.	12.RD	11-2015	236,643	-
Telaris Genesis, Inc.	12.RD	9-2016	245,896	-
University of California Berkeley	12.431	00009460	144,153	-
University of California Los Angeles	12.431	0160 G UA559	119,415	-
University of California San Francisco	12.420	9418sc	40,394	-
University of California Santa Barbara	12.RD	KK9150	1,132,644	68,333

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
Department of Defense (Continued)				
Army (Continued)				
University of California Davis	12.431	201301045-04	$ 234,784	$ -
University of Southern California	12.RD	89865874	11,787	-
University of Texas at Austin	12.431	UTA16-000852	221,265	-
University of Utah	12.630	10028801-CAL-BPP CLIN004	71,980	-
Total Army Pass-Through			3,514,295	68,333
Navy				
Brown University	12.300	00001043	42,006	-
Brown University	12.300	00000984	207,920	-
Harvard University	12.300	123950-5092636	503,188	-
Massachusetts Institute of Technology	12.300	5710003358	199,026	-
University of California Los Angeles	12.300	0980 G RE457	95,729	-
University of New Hampshire	12.300	17-049	22,249	-
University of Minnesota	12.300	A006141801	2,183	-
University of California Los Angeles	12.300	0980 G SB033	241,307	-
Total Navy Pass-Through			1,313,608	-
Defense Advanced Research Projects Agency				
Columbia University	12.910	3(GG012664)	58,522	-
Draper	12.RD	SC001-1088	488,400	-
Duke University	12.910	313-0699	322,844	-
Harvard University	12.910	152236.5099923.0004	46,074	-
Honeywell	12.910	3501723955E	307,754	-
Massachusetts Institute of Technology	12.RD	5710004046	446,422	-
The Ohio State University	12.351	60047783	111,987	-
University of California Berkeley	12.910	00008161/BB00143380	234,053	-
University of California Santa Barbara	12.910	KK1540	384,170	-
Total Defense Advanced Research Projects Agency Pass-Through			2,400,226	-
Total Department of Defense Pass-Through			8,688,646	68,333

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
Department of Energy				
Aerosol Dynamics, Inc.	81.049	3901	$ 183,803	$ -
Argonne National Laboratory	81.RD	3F-30421	1,244	-
Arizona State University	81.087	14-377	(18,265)	-
Brookhaven National Laboratory	81.RD	310211	98,902	-
Carnegie Institute	81.049	4-10114-02 B	146,471	-
Carnegie Institute	81.112	4-10469-02	57,537	-
Fermilab National Accelerator Laboratory	81.RD	554897	74,248	-
Fermilab National Accelerator Laboratory	81.RD	612044	7,784	-
Fermilab National Accelerator Laboratory	81.RD	615210	97,971	-
Fermilab National Accelerator Laboratory	81.RD	620353	491	-
Fermilab National Accelerator Laboratory	81.RD	625619	5,857	-
Fermilab National Accelerator Laboratory	81.RD	626507	138,590	-
Fermilab National Accelerator Laboratory	81.RD	629947	86,469	-
Fermilab National Accelerator Laboratory	81.RD	631328	46,775	-
Fermilab National Accelerator Laboratory	81.RD	635161	125,778	-
Fermilab National Accelerator Laboratory	81.RD	635571	22,862	-
Idaho National Laboratory	81.RD	179457	285,164	-
Krell Institute	81.RD	KRELL.GRADPT	5,325	-
Lawrence Berkeley National Laboratory	81.RD	7366908	2,209	-
Lawrence Livermore National Laboratory	81.RD	B609604	2,561	-
Lawrence Livermore National Laboratory	81.RD	B611977	96,353	-
Lawrence Livermore National Laboratory	81.RD	B621015	92,911	-
Liox Power	81.086	102679	83,451	-
Los Alamos National Laboratory	81.RD	305963	171,532	-
Los Alamos National Laboratory	81.RD	388712	16,339	-
Los Alamos National Laboratory	81.RD	444203	33,143	-
National Security Technologies. LLC	81.RD	146428	53,690	-
Oak Ridge Institute for Science and Education	81.RD	ORISE.MCELROY	4,965	-
Princeton University	81.049	SUB0000153	134,749	-
Radiation Monitoring Devices, Inc.	81.049	C15-28	24,265	-
Safcell, Inc.	81.135	C2014.0025	111,900	-
Sandia National Laboratories	81.RD	1416776	(13)	-
Stanford University	81.087	60962301-51077	(1,395)	-
Stanford University	81.087	61559158-51077	109,787	-
University Of Colorado at Boulder	81.135	1554051	301,746	-

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
Department of Energy (Continued)				
University of Delaware	81.049	37733	$ 222,617	$ -
University of Michigan	81.135	3004152693	45,400	-
University of Southern California	81.049	68192992	135,597	-
Washington State University	81.112	21238_G003613	116,772	-
Total Department of Energy Pass-Through			3,125,585	-
Department of Health and Human Services				
National Institutes of Health				
Aerosol Dynamics, Inc.	93.262	NIHOH010515	120,937	-
Allen Institute for Brain Science	93.242	2014-215	212,918	-
Allen Institute for Brain Science	93.242	2015-0437	41,162	-
Brandeis University	93.242	402473	143,411	-
Georgia Institute of Technology	93.103	RG219-G5	6,180	-
Hudsonalpha Institute for Biotechnology	93.172	2013-01	388,215	-
Indiana University	93.242	BL-4631256-CT	56,874	-
Intan Technologies, LLC	93.853	INTAN-1R43NS089127	23,675	-
Jackson Laboratory	93.172	206035-0-SERV	162,624	-
Princeton University	93.853	SUB0000038	301,891	-
Science Applications International Corporation	93.RD	11XS287	138,276	-
Symbiotix Biotherapies, Inc.	93.847	SBI-003	186,087	-
The Scripps Research Institute	93.279	5-52645	83,855	-
The University of Chicago	93.853	FP061371-A	77,403	-
University at Buffalo	93.286	R1044577	24,299	-
University of California Los Angeles	93.286	0845 G SB495	187,262	-
University of California Los Angeles	93.310	1553 G UC338	794,775	-
University of California Los Angeles	93.837	1564GSA123	129,474	-
University of California Los Angeles	93.286	1713 G RA348	63,498	-
University of California Los Angeles	93.853	1713 G UA875	214,888	-
University of California San Francisco	93.394	8849sc	191,640	-
University of California San Francisco	93.867	9190SC	204,069	-
University of California Santa Barbara	93.859	KK1645	25,186	-
University of California Santa Cruz	93.172	S0184278	153,855	-

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
Department of Health and Human Services (Continued)				
National Institutes of Health (Continued)				
University of Georgia	93.855	RR182-434/4708841	$ 47,974	$ -
University of Massachusetts	93.242	WA00358278/RFS2016070	40,051	-
University of Minnesota	93.351	H005556202	13,377	-
University of Southern California	93.859	159431	4,429	-
University of Southern California	93.RD	56294097	186,686	-
University of Southern California	93.172	86281301	47,075	-
University of Utah	93.859	10027535-05	293,701	-
University of Utah	93.859	10027535-06	365,166	-
University of Washington	93.847	UWSC7927	129,808	-
University of Washington	93.173	UWSC8030	88,029	-
Vanderbilt University	93.847	VUMC 52731	398,249	-
Vanderbilt University	93.847	VUMC 57088	368,554	-
Total National Institutes of Health Pass-Through			5,915,553	-
Total Department of Health and Human Services Pass-Through			5,915,553	-
Department of the Interior				
United States Geological Survey (USGS)				
Baylor College of Medicine	15.RD	102185175	282,498	-
University of Southern California	15.808	Y80804	61,633	5,600
University of Southern California	15.808	Y86581	112,344	-
Total Department of the Interior Pass-Through			456,475	5,600

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
Environmental Protection Agency				
University of California Berkeley	66.509	00008461	$ 82,916	$ -
National Aeronautics and Space Administration (NASA)				
Baylor College of Medicine	43.003	7000000323	145,074	-
Chromologic LLC	43.RD	MSA-161004	79,617	-
Harvard University	43.001	131396-5071107	69,158	-
Harvard University	43.001	131477-5099213	3,390	-
Johns Hopkins University	43.001	135896	41,202	-
Massachusetts Institute of Technology	43.001	5710003373	49,271	-
Orbital Science Corporation	43.RD	2511670036	45,426	-
Pennsylvania State University	43.001	4984-CIT-NASA-D22G	50,892	-
Princeton University	43.001	00002046	188,147	-
Princeton University	43.RD	SUB0000157	1,395,980	-
Princeton University	43.001	SUB0000194	1,321	-
Smithsonian Astrophysical Observatory	43.001	AR6-17005X	1,112	-
Smithsonian Astrophysical Observatory	43.001	DD6-17085X	3,710	-
Smithsonian Astrophysical Observatory	43.001	GO5-16149X	3,290	-
Smithsonian Astrophysical Observatory	43.001	GO6-17080X	6,793	-
Smithsonian Astrophysical Observatory	43.001	GO6-17101X	2,389	-
Smithsonian Astrophysical Observatory	43.001	GO7-18105X	3,918	-
Smithsonian Astrophysical Observatory	43.001	PF3-140114	1,439	-
Smithsonian Astrophysical Observatory	43.001	PF5-160136	115,540	-
Smithsonian Astrophysical Observatory	43.001	PF6-170152	114,794	-
Southwestern Research Institute	43.RD	1415GC0042	13,211	-
Southwestern Research Institute	43.RD	699047X	182,705	-
Southwestern Research Institute	43.RD	699048X	245,561	-
Southwestern Research Institute	43.RD	699049X	105,085	-
Southwestern Research Institute	43.RD	D99029L	764,187	-
Southwestern Research Institute	43.001	K99057JRG	7,128	
Space Telescope Science Institute	43.001	GO6-17101X	2,851	-
Space Telescope Science Institute	43.001	HST-AR-13917.007-A	33,500	-
Space Telescope Science Institute	43.001	HST-AR-14285.006-A	(139)	-
Space Telescope Science Institute	43.001	HST-G0-11702.04-A	(3,514)	-
Space Telescope Science Institute	43.RD	HST-GO-12234.02-A	19,136	-
Space Telescope Science Institute	43.RD	HST-GO-12473.11-A	37,138	-
Space Telescope Science Institute	43.RD	HST-GO-12534.001-A	9,917	-
Space Telescope Science Institute	43.RD	HST-GO-12902.08-A	7,138	-

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
National Aeronautics and Space Administration (NASA) (Continued)				
Space Telescope Science Institute	43.RD	HST-GO-12970.01-A	$ (57)	$ -
Space Telescope Science Institute	43.001	HST-GO-13025.009-A	2,024	-
Space Telescope Science Institute	43.RD	HST-GO-13178.01-A	4,340	-
Space Telescope Science Institute	43.RD	HST-GO-13321.001-A	21,872	-
Space Telescope Science Institute	43.001	HST-GO-13340.001-A	(1,277)	-
Space Telescope Science Institute	43.RD	HST-GO-13341.001-A	4,713	-
Space Telescope Science Institute	43.RD	HST-GO-13352.010-A	62,926	-
Space Telescope Science Institute	43.RD	HST-GO-13364.40-A	431	-
Space Telescope Science Institute	43.RD	HST-GO-13431-001-A	2,992	-
Space Telescope Science Institute	43.001	HST-GO-13501.01-A	5,878	-
Space Telescope Science Institute	43.001	HST-GO-13641.001-A	87,231	-
Space Telescope Science Institute	43.RD	HST-GO-13665.005-A	11,780	-
Space Telescope Science Institute	43.RD	HST-GO-13683.001-A	2,007	-
Space Telescope Science Institute	43.RD	HST-GO-13684.001-A	1,537	-
Space Telescope Science Institute	43.RD	HST-GO-13690.002-A	123,622	-
Space Telescope Science Institute	43.RD	HST-GO-13826.004-A	5,057	-
Space Telescope Science Institute	43.001	HST-GO-13858.009-A	14,438	-
Space Telescope Science Institute	43.001	HST-GO-14115.001-A	9,659	-
Space Telescope Science Institute	43.001	HST-GO-14116.001-A	4,715	-
Space Telescope Science Institute	43.001	HST-GO-14123.002-A	278	-
Space Telescope Science Institute	43.001	HST-GO-14178.008-A	7,315	-
Space Telescope Science Institute	43.001	HST-GO-14258.010-A	5,891	-
Space Telescope Science Institute	43.001	HST-GO-14260.003-A	55,890	-
Space Telescope Science Institute	43.001	HST-GO-14347.001-A	(2,600)	-
Space Telescope Science Institute	43.001	HST-GO-14455.004-A	4,876	-
Space Telescope Science Institute	43.001	HST-GO-14516.002-A	12,259	-
Space Telescope Science Institute	43.001	HST-GO-14645.001-A	6,160	-
Space Telescope Science Institute	43.001	HST-GO-14650.001-A	1,170	-
Space Telescope Science Institute	43.001	HST-GO-14682.005-A	8,159	-
Space Telescope Science Institute	43.001	HST-GO-14734.011-A	2,864	-
Space Telescope Science Institute	43.001	HST-GO-14764.001-A	5,976	-
Space Telescope Science Institute	43.001	HST-GO-14767.010-A	24,397	-
Space Telescope Science Institute	43.001	HST-GO-14862.002-A	11,773	-
Space Telescope Science Institute	43.001	HST-GO-14887.005-A	19,477	-
Space Telescope Science Institute	43.RD	HST-HF2-51365.001-A	97,552	-

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
National Aeronautics and Space Administration (NASA) (Continued)				
Space Telescope Science Institute	43.001	HST-HF2-51377.001-A	$ 106,549	$ -
Space Telescope Science Institute	43.001	STI-510253	962,778	-
Space Telescope Science Institute	43.001	STScI-50320	70,873	-
The Ohio State University	43.RD	60052242 - RF01451668	242,205	-
Tufts University	43.001	NASA90	23,806	-
Universities Space Research Association	43.RD	08521-018	44,274	-
Universities Space Research Association	43.RD	08521-019	18,092	-
Universities Space Research Association	43.RD	SOF 03-0098 Morris	23,742	-
Universities Space Research Association	43.RD	SOF 05-0014 Appleton	411	-
Universities Space Research Association	43.RD	SOF 05-0089 Morris	98	-
Universities Space Research Association	43.RD	SOF 05-0104 Chary	253	-
Universities Space Research Association	43.RD	SOF 05-0146 Chary	142	-
Universities Space Research Association	43.RD	SOF04-0017 Appleton	23,935	-
Universities Space Research Association	43.RD	SOF04-0072 Paladini	(456)	-
University of California Berkeley	43.001	00008864	307,493	-
University of California Los Angeles	43.001	0995 G SA431	431	-
University of California Los Angeles	43.001	2095 G UA002	34,762	-
University of California San Diego	43.001	68123354	15,165	-
University of California, Irvine	43.001	2017-3455	2,901	-
University of Colorado Boulder	43.001	1551484	4,077	-
University of Maryland	43.001	34508-Z6037001	(4,414)	-
University of Maryland	43.001	44707-Z6065001	33,140	-
University of Michigan	43.001	3003962831	6,869	-
University of Nebraska, Lincoln	43.001	25-6238-0753-003	10,434	-
University of Southern California	43.001	38485892	150,013	-
Woods Hole Institution of Oceanography	43.001	23164800	8,698	-
Total NASA Pass-Through			6,457,963	-

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
National Science Foundation				
Arizona State University	47.041	12-729	$ (47,139)	$ -
Arizona State University	47.041	17-100	388,700	-
Assoc. of Universities for Research In Astronomy	47.049	N51608C	2,062,361	-
Carnegie Mellon University	47.079	1121550-259731	29,865	-
Carnegie Mellon University	47.050	1122215-343879	91,096	-
Columbia University	47.050	9(GG009393)	3,861	-
Columbia University	47.050	9(GG009393-01)	64,512	-
Columbia University	47.050	9H(GG009393)	26,608	-
Columbia University	47.050	9S(GG009393)	22,176	-
Columbia University	47.050	9T(GG009393)	252,995	-
Cornell University	47.070	72954-10593	37,254	-
Emory University	47.049	T662110	124,168	-
Georgia Institute of Technology	47.070	1544332	7,706	-
Georgia Institute of Technology	47.070	RG229-G1	23,265	-
Harvard University	47.078	5064956-131340	60,003	-
Michigan State University	47.049	RC105065CIT	60,075	-
National Radio Astronomy Observatory	47.049	346351	52,018	-
National Radio Astronomy Observatory	47.049	352658	21,596	-
National Radio Astronomy Observatory	47.049	355249	15,533	-
National Radio Astronomy Observatory	47.049	355365	7,030	-
Oregon Health Sciences University	47.074	1009951_CALTECH	56,676	-
Princeton University	47.049	ORPA002009	332,694	-
Princeton University	47.049	SUB0000150	111,089	-
Princeton University	47.049	SUB0000174	347,283	-
Protabit LLC	47.041	1534743	117,606	-
Provivi, Inc.	47.041	NSF1549855	103,031	-
Space Environmental Technologies	47.049	CG-2015-1-1	52,904	-
Stanford University	47.049	60078899-105579-C	3,738	-
The University of North Carolina at Charlotte	47.070	20160600-01-CIT	117,979	-
Tufts University	47.049	NS1560	16,257	-
University of California Berkeley	47.049	00008795	8,635	-
University of California Berkeley	47.076	00009345	96,004	-
University of California Santa Cruz	47.049	A17-0534-S001-P0604827	1,949	-

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Research and Development Cluster (Continued)				
Pass-Through Funds (Continued)				
National Science Foundation (Continued)				
University of Hawaii Manoa	47.050	MA1234	$ 5,142	$ -
University of Illinois	47.070	15835	43,471	-
University of Iowa	47.049	1001641867	28,519	
University of Michigan	47.049	3002828221	48,737	-
University of Minnesota	47.049	A003778901	34,435	15,179
University of Southern California	47.041	55096262	228,797	-
University of Southern California	47.041	59997380	120,050	-
University of Southern California	47.083	66468073	162,685	-
University of Washington	47.041	UWSC9356	97,695	
University of Wisconsin-Milwaukee	47.049	123405532	34,953	-
University of Wisconsin-Milwaukee	47.049	153405540	138,874	-
W.M. Keck Observatory	47.049	11523	(164,438)	-
W.M. Keck Observatory	47.049	13679	3,358	-
Washington State University	47.041	120239 G003227	15,487	-
Total National Science Foundation Pass-Through			5,467,293	15,179
Nuclear Regulatory Commision				
Univeristy of Wisconsin	77.RD	707K560	43,634	-
Total Research and Development - Pass-Through Funds			30,942,868	288,837
Total Research and Development Cluster			242,051,862	28,414,281

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Student Financial Aid Cluster				
Direct Funds				
Department of Education				
Federal Work Study Program	84.033		$ 346,703	$ -
Federal Supplemental Educational Opportunity Grant	84.007		431,988	-
Federal Pell Grant Program	84.063		496,470	-
Federal Perkins Loan				
Outstanding Loans as of September 30, 2017	84.038		4,562,574	-
New Loans Issued during 2017	84.038		-	-
Federal Direct Loans	84.268		733,888	-
Total Student Financial Aid Cluster			6,571,623	-
Total Expenditures of Federal Awards			$ 248,623,485	$ 28,414,281

1. Summary of Significant Accounting Policies

General

The California Institute of Technology (the "Institute") is a private, not-for-profit institution of higher education based in Pasadena, California. The Institute provides education and training services, primarily for students at the undergraduate, graduate, and postdoctoral levels. The Institute performs research, training, and other services under grants, contracts, and similar agreements with sponsoring organizations, primarily departments and agencies of the United States government. The awards set forth in the accompanying Schedule of Expenditures of Federal Awards (the "Schedule") do not include amounts related to the Jet Propulsion Laboratory ("JPL") which is a National Aeronautics and Space Administration ("NASA") Federally Funded Research and Development Center ("FFRDC") managed by the Institute. Please refer to the separate audited financial statements and related OMB Uniform Guidance reports for JPL.

Basis of Presentation

The Schedule has been prepared on the cash basis of accounting and in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* ("Uniform Guidance"). The Schedule summarizes the expenditures of the Institute under programs of the federal government for the year ended September 30, 2017, except those related to JPL. Because the Schedule presents only a selected portion of the operations of the Institute and is prepared on the cash basis of accounting, it is not intended to and does not present the financial position, changes in net assets or cash flows of the Institute in accordance with accounting principles generally accepted in the United States of America.

Expenditures for direct costs are recognized as incurred using the cash basis of accounting and the cost accounting principles contained in OMB Circular A-21, *Cost Principles for Educational Institutions* and, effective December 26, 2014, the Uniform Guidance, as applicable. Under those cost principles, certain types of expenditures are not allowable or are limited as to reimbursements. Moreover, expenditures include a portion of costs associated with general institution activities (facilities and administrative costs) which are allocated to awards under negotiated formulas commonly referred to as indirect cost rates. The Institute has elected to use its own negotiated indirect cost rates rather than the 10% deminimis rate allowed by Uniform Guidance.

Negative balances reflected in the Schedule represent adjustments to expenditures under awards made in prior years.

The Institute receives funding or reimbursement from Federal Government agencies primarily for research under government grants and contracts. Grants and contracts provide for reimbursement of indirect costs based on rates negotiated with the Department of Defense's Office of Naval Research ("ONR"), the Institute's cognizant federal agency. ONR has approved fixed with carry forward rates for FY2014, FY2015, FY2016, FY2017, and FY2018. ONR engages the Defense Contract Audit Agency ("DCAA") to audit indirect charges to the Institute's grants and contracts. Actual incurred costs for FY2014, FY2015, and FY2016 have been submitted to ONR pending audits by DCAA. In the opinion of management, the results of such audits will not have a material impact on the Schedule.

1. Summary of Significant Accounting Policies (Continued)

For purposes of the Schedule, federal awards include all grants, contracts and similar agreements entered into directly between the Institute and agencies and departments of the federal government and all subawards to the Institute by nonfederal organizations pursuant to federal grants, contracts and similar agreements.

2. Loan Advances

The Federal Perkins Loan Program is administered directly by the Institute. The outstanding balance of loans at September 30, 2017 was $3,672,164. Balances and transactions related to this program are included in the Institute's financial statements. The Institute did not charge any administrative cost allowance to the Federal Perkins Loan Program for the year ended September 30, 2017.

There was no outstanding loan balance under the Federal Direct Loan Program at September 30, 2017.

3. Commingled Assistance

California Student Aid Commission (CSAC) administers the State Cal Grant A and B Programs, selects the student recipients of these grant awards, and provides funds to participating institutions for disbursement. Federal Temporary Assistance for Needy Families (TANF) funds, CFDA Number 93.558, from the United States Department of Health and Human Services may comprise up to approximately 25% of the total funding for these Cal Grant awards. In fiscal year 2017, the Institute received Cal Grant A and B funds in the amount of $153,032; however, CSAC is unable to determine the exact amount of TANF funds, if any, represented in those awards. Therefore, the Schedule does not include State Cal Grant A and B awards.

Report of Independent Auditors on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of Trustees of the
California Institute of Technology

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the California Institute of Technology, which comprise the balance sheet as of September 30, 2017, and the related statements of activities and of cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated January 24, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Institute's internal control over financial reporting ("internal control") to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Institute's internal control. Accordingly, we do not express an opinion on the effectiveness of the Institute's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Institute's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

PricewaterhouseCoopers LLP

Los Angeles, California
January 24, 2018

Report of Independent Auditors on Compliance with Requirements That Could Have a Direct and Material Effect on Each Major Program and on Internal Control Over Compliance in Accordance with the Uniform Guidance

To the Board of Trustees of the
California Institute of Technology

Report on Compliance for Each Major Federal Program

We have audited the California Institute of Technology's compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of the Institute's major federal programs for the year ended September 30, 2017. The Institute's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

The Institute's basic financial statements include the operations of the Jet Propulsion Laboratory (a Federally Funded Research and Development Center managed by the Institute), which incurred $2,282,766,000 in federal expenditures which are not included in the Institute's schedule of expenditures of federal awards for the year ended September 30, 2017. Our audit did not include the operations of the Jet Propulsion Laboratory because it is audited and reported upon as a separate entity pursuant to Section 200(f) of the Uniform Guidance and is, therefore, not within the scope of this audit.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations and the terms and conditions of its federal awards applicable to its federal programs.

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for each of the Institute's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Institute's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of the Institute's compliance.

Opinion on Each Major Federal Program

In our opinion, the California Institute of Technology complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended September 30, 2017.

Report on Internal Control Over Compliance

Management of the Institute is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Institute's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Institute 's internal control over compliance.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

PricewaterhouseCoopers LLP

Los Angeles, California
May 18, 2018

California Institute of Technology
Schedule of Findings and Questioned Costs
For the Year Ended September 30, 2017

SECTION I – SUMMARY OF AUDITOR'S RESULTS

Financial Statements

Type of auditor's report issued:	Unmodified
Internal control over financial reporting:	
• Material weakness(es) identified?	No
• Significant deficiency(ies) identified that are not considered to be material weakness(es)?	None Reported
Noncompliance material to the financial statements noted?	No

Federal Awards

Internal control over major programs:	
• Material weakness(es) identified?	No
• Significant deficiency(ies) identified that are not considered to be material weakness(es)?	None Reported
Type of auditor's report issued on compliance for major programs:	Unmodified
Any audit findings that are required to be reported in accordance with 2 CFR 200.516(a)?	No

Identification of major programs:

Program Name	**CFDA Number**
Research and Development Cluster	Various

Dollar threshold used to distinguish between Type A and Type B programs:	$3,000,000
Auditee qualified as a low-risk auditee?	Yes

SECTION II – FINANCIAL STATEMENT FINDINGS

None reported.

Section III – FEDERAL AWARD FINDINGS AND QUESTIONED COSTS

None reported.

California Institute of Technology
Summary Schedule of Prior Audit Findings
For the Year Ended September 30, 2017

There were no prior audit findings which require an update in this report.