California Institute of Technology

Financial Statements
For the Years Ended September 30, 2021 and 2020

pwc

Report of Independent Auditors

To the Board of Trustees of California Institute of Technology

We have audited the accompanying financial statements of California Institute of Technology (the “Institute”), which comprise the balance sheets as of September 30, 2021 and 2020, and the related statements of activities and of cash flows for the years then ended.

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. 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 California Institute of Technology as of September 30, 2021 and 2020, 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.

PricewaterhouseCoopers LLP

January 28, 2022

PricewaterhouseCoopers LLP, 601 South Figueroa, Los Angeles, CA 90017
T: (213) 356 6000, www.pwc.com/us

California Institute of Technology
Balance Sheets
At September 30, 2021 and 2020
(Dollars in Thousands)

	2021	2020
ASSETS		
Cash and cash equivalents (Note B)	$ 62,429	$ 46,908
Accounts and notes receivable, net		
United States government	218,725	257,618
Other	60,770	38,339
Contributions receivable, net	192,234	159,458
Investments	4,944,969	3,971,621
Prepaid expenses and other assets	253,023	215,234
Deferred United States government billings	345,262	395,130
Property, plant, and equipment, net	1,159,153	1,168,276
Total assets	$ 7,236,565	$ 6,252,584
LIABILITIES and NET ASSETS		
Liabilities:		
Accounts payable and accrued expenses	$ 338,609	$ 399,792
Accrued compensation and benefits	312,125	308,548
Deferred revenue, refundable advances, and other	70,331	54,121
Annuities, trust agreements, and agency funds	107,903	89,498
Bonds and notes payable, net	1,624,307	1,668,052
Accumulated postretirement benefit obligation	402,783	455,016
Total liabilities	2,856,058	2,975,027
Net assets:		
Without donor restrictions	702,037	430,676
With donor restrictions:		
Time or purpose	1,650,634	959,583
Perpetual	2,027,836	1,887,298
Total net assets with donor restrictions	3,678,470	2,846,881
Total net assets	4,380,507	3,277,557
Total liabilities and net assets	$ 7,236,565	$ 6,252,584

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

California Institute of Technology
Statement of Activities
For the Year Ended September 30, 2021
(with summarized financial information for the year ended September 30, 2020)
(Dollars in Thousands)

	Without Donor Restrictions	With Donor Restrictions	2021 Total	2020 Total
Operating revenues:				
Tuition and fees, net of student financial aid	$ 30,869	$ -	$ 30,869	$ 40,926
Endowment spending, distributed	33,535	132,849	166,384	156,705
Gifts and pledges	39,200	42,978	82,178	83,189
Grants and contracts:				
Jet Propulsion Laboratory operations	2,361,658	-	2,361,658	2,615,146
United States government, Campus - direct	225,888	-	225,888	208,195
Other Campus - direct	65,283	10,172	75,455	34,584
Recovery of indirect costs and allowances	140,634	-	140,634	151,901
Sales and services	44,029	-	44,029	47,056
Other	18,894	-	18,894	16,709
Net assets released from restrictions	170,673	(170,673)	-	-
Total operating revenues and other support	3,130,663	15,326	3,145,989	3,354,411
Operating expenses:				
Compensation and benefits	437,711	-	437,711	431,751
Supplies and services	148,405	-	148,405	126,531
Subcontracts	55,532	-	55,532	41,675
Depreciation, accretion, and amortization	90,319	-	90,319	77,336
Utilities	17,962	-	17,962	16,690
Interest	34,143	-	34,143	31,672
Jet Propulsion Laboratory operations	2,361,658	-	2,361,658	2,615,146
Total operating expenses	3,145,730	-	3,145,730	3,340,801
Results of operations	(15,067)	15,326	259	13,610
Non-operating changes:				
Investment return in excess of endowment spending	303,014	654,820	957,834	45,588
Endowment spending, undistributed	3,401	4,132	7,533	12,959
Gifts and pledges	3,338	163,372	166,710	78,035
Changes in fair value of interest rate swap	19,748	-	19,748	(13,561)
Changes in benefit obligations and related recoveries, net	936	-	936	(17,821)
Interest expense	(21,940)	-	(21,940)	(25,301)
Redesignations, reclassifications and other	(22,069)	(6,061)	(28,130)	(10,826)
Total non-operating activities	286,428	816,263	1,102,691	69,073
Increase in net assets	271,361	831,589	1,102,950	82,683
Net assets at beginning of year	430,676	2,846,881	3,277,557	3,194,874
Net assets at end of year	$ 702,037	$ 3,678,470	$ 4,380,507	$ 3,277,557

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

California Institute of Technology
Statement of Activities
For the Year Ended September 30, 2020
(Dollars in Thousands)

	Without Donor Restrictions	With Donor Restrictions	2020 Total
Operating revenues:			
Tuition and fees, net of student financial aid	$ 40,926	$ -	$ 40,926
Endowment spending, distributed	33,304	123,401	156,705
Gifts and pledges	33,843	49,346	83,189
Grants and contracts:			
Jet Propulsion Laboratory operations	2,615,146	-	2,615,146
United States government, Campus - direct	208,195	-	208,195
Other Campus - direct	30,974	3,610	34,584
Recovery of indirect costs and allowances	151,901	-	151,901
Sales and services	47,056	-	47,056
Other	16,709	-	16,709
Net assets released from restrictions	145,385	(145,385)	-
Total operating revenues and other support	3,323,439	30,972	3,354,411
Operating expenses:			
Compensation and benefits	431,751	-	431,751
Supplies and services	126,531	-	126,531
Subcontracts	41,675	-	41,675
Depreciation, accretion, and amortization	77,336	-	77,336
Utilities	16,690	-	16,690
Interest	31,672	-	31,672
Jet Propulsion Laboratory operations	2,615,146	-	2,615,146
Total operating expenses	3,340,801	-	3,340,801
Results of operations	(17,362)	30,972	13,610
Non-operating changes:			
Investment return in excess of endowment spending	12,380	33,208	45,588
Endowment spending, undistributed	3,228	9,731	12,959
Gifts and pledges	6,856	71,179	78,035
Changes in fair value of interest rate swap	(13,561)	-	(13,561)
Changes in benefit obligations and related recoveries, net	(17,821)	-	(17,821)
Interest expense	(25,301)	-	(25,301)
Redesignations, reclassifications and other	(4,725)	(6,101)	(10,826)
Total non-operating activities	(38,944)	108,017	69,073
(Decrease)/Increase in net assets	(56,306)	138,989	82,683
Net assets, beginning of year	486,982	2,707,892	3,194,874
Net assets, end of year	$ 430,676	$ 2,846,881	$ 3,277,557

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, 2021 and 2020
(Dollars in Thousands)

	2021	2020
Cash flows from operating activities:		
Increase in net assets	$ 1,102,950	$ 82,683
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Depreciation, accretion, and amortization	90,319	77,336
Changes in postemployment benefit obligations	(24,925)	60,885
Contributions restricted for long-term investment and capital projects	(146,527)	(67,421)
Realized and unrealized gains on investments and swap	(1,078,679)	(148,851)
Other non-cash items	(12,514)	(16,715)
Effects of changes in assets and liabilities (increase/(decrease) to cash):		
Accounts and notes receivable, net	26,944	73,018
Contributions receivable, net	11,074	(11,564)
Prepaid expenses and other assets	(27,749)	(15,476)
Deferred United States government billings	49,868	(32,362)
Accounts payable and accrued expenses	(21,680)	(36,234)
Accrued compensation and benefits	3,577	38,667
Deferred revenue, refundable advances, and agency funds	19,916	22,830
Accumulated postretirement benefit obligation	(27,308)	(27,768)
Net cash used in operating activities	(34,734)	(972)
Cash flows from investing activities:		
Purchases of investments	(1,002,242)	(1,078,791)
Proceeds from sales and maturities of investments	1,099,630	706,596
Purchases of property, plant, and equipment	(102,662)	(161,456)
Proceeds from sale of property, plant, and equipment	1,813	10,308
Net cash used in investing activities	(3,461)	(523,343)
Cash flows from financing activities:		
Contributions restricted for long-term investment and capital projects	93,659	69,045
Investment return restricted for long-term investment and capital projects	713	710
Cash received under annuity and trust agreements	10,289	10,007
Cash payments made under annuity and trust agreements	(6,945)	(6,766)
Net repayments of short-term debt	(44,000)	(2,643)
Proceeds from issuance of bonds	-	494,360
Net cash provided by financing activities	53,716	564,713
Net change in cash and cash equivalents	15,521	40,398
Cash and cash equivalents at beginning of year	46,908	6,510
Cash and cash equivalents at end of year	$ 62,429	$ 46,908

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 operations are reflected in the Institute's balance sheets. The direct costs of JPL's operations and the related reimbursement of those costs are reflected separately 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 ("GAAP").

Net Assets

Under GAAP, the Institute classifies its resources for reporting purposes in two categories based on the existence or absence of donor-imposed restrictions. Those categories, and descriptions of the types of transactions affecting each category, follow:

- The category "Net assets without donor restrictions" consists of those net assets not subject to donor-imposed restrictions. Activities that affect this category generally consist of fees for services, research revenues, and related expenses associated with the Institute's operating activities, as well as activities related to funds functioning as endowment and certain philanthropic support. Contributions not subject to donor-imposed restrictions and donor-restricted contributions that are received and either spent, or deemed spent, for the restricted purpose within the same year are reported as increases to net assets without donor restrictions.

  "Net assets without donor restrictions" include certain funds that are board-designated as functioning as endowment. There are no other board-designated funds.

- The category "Net assets with donor restrictions" includes both net assets that are subject to donor-imposed time or purpose restrictions that are expected to be met and those subject to donor-imposed perpetual restrictions. Net assets with donor-imposed restrictions that are expected to be met include endowment investment returns that have not yet been appropriated for expenditures, certain funds restricted for capital projects, and certain life income and annuity funds. The Institute meets such donor restrictions through the passage of time, the appropriation of endowment earnings, placing gift-funded capital projects into service, and/or the Institute's incurrence of expenditures or other payments. When such restrictions are met, the related net assets are released to net assets without donor restrictions.

Net assets with donor restrictions that are subject to perpetual restrictions include endowment gifts, related contributions receivable, and certain charitable life income and annuity funds for which donors have stipulated that the original value of their contributions and, if applicable, certain subsequent accumulations, be held in perpetuity.

For additional disclosures of the Institute's net assets, refer to Note H.

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.

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, 2021 and 2020 were $62,429 and $46,908, respectively. The Institute classifies cash equivalents held as part of the investment portfolios as short-term investments. Such investments are not included in the line item “Cash and cash equivalents” in the Statements of Cash Flows. At September 30, 2021 and 2020, short-term investments, as disclosed in Note D, included $304,385 and $293,777, respectively, in cash equivalents. Carrying amounts of cash equivalents approximate fair value due to the relatively short maturities of these instruments.

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 $247,253 and $273,899 at September 30, 2021 and 2020, respectively. Activity in the allowance accounts was not significant during the years ended September 30, 2021 and 2020. The carrying value of net accounts receivable approximates fair value.

At September 30, 2021 and 2020, the Institute held aggregate accounts receivable from students and employees of $561 and $828, respectively, and loans receivable from students of $5,358 and $5,388, respectively. Both accounts and loans receivable are carried at cost, and only minor amounts of these receivables are expected to become uncollectible.

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 $26,324 and $15,843 and accounts payable included $2,433 and $1,045 related to investment transactions not yet settled at September 30, 2021 and 2020, respectively.

Short-term investments included $40,949 and $55,799 held by the counterparty to the Institute's interest rate swap at September 30, 2021 and 2020, respectively, as collateral in accordance with the terms of the swap agreement.

Property, Plant, and Equipment

Property, plant, and equipment is recorded at the cost of construction, acquisition, or 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, was $15,531 and $10,648 at September 30, 2021 and 2020, respectively, and is included in the line item "Property, plant, and equipment, net" in the balance sheets. Conditional asset retirement obligations were $33,000 and $27,293 at September 30, 2021 and 2020, respectively, and are included in the line item "Accounts payable and accrued expenses" in the balance sheets.

The Institute determines if an arrangement is a lease at inception of a contract. A contract is determined to be a lease if the contract conveys the right to control the use of identified property, plant, or equipment ("identified asset") in exchange for consideration. The Institute has elected to apply the practical expedients permitted under the transition provisions of Accounting Standards Codification ("ASC") section 842, *Leases*. Accordingly, the Institute has determined the effects on the financial statements to be immaterial and therefore has recorded no right-to-use assets, operating lease obligations, or finance lease obligations at September 30, 2021 and 2020.

Annuities, Trust Agreements, and Agency Funds

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 and totaled $138,087 and $116,763 at September 30, 2021 and 2020, respectively. 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 0.4% to 10.6% 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 to determine the liabilities recorded at September 30, 2021 and 2020. Split-interest agreement liabilities totaled $79,949 and $66,404 at September 30, 2021 and 2020, 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 $7,793 and $6,639 at September 30, 2021 and 2020, respectively.

The Institute held assets totaling $20,161 and $16,455 in agency funds on behalf of other entities at September 30, 2021 and 2020, respectively. The assets held are primarily included in the line item "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.

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. Interests in 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 $37,807 and $27,077 at September 30, 2021 and 2020, respectively, and are included in the line item "Prepaid expenses and other assets" 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, 2021 and 2020, accrued compensated absences of $124,159 and $120,408, respectively, are included in the line item "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 the line item "Accrued compensation and benefits" in the balance sheets. At September 30, 2021 and 2020, liabilities for workers' compensation were $11,479 and $13,047, respectively.

Revenue Recognition
The Institute's revenue recognition policies are as follows:

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

- *Gifts* - Unconditional contributions, including promises to give, are recorded as revenues in the year received. Noncash 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.

Conditional contributions, which are characterized by both the presence of one or more donor-imposed barriers to the Institute's entitlement to promised resources and the donor's right of return of funds or the right to be released of obligations to transfer assets in the future, are recorded when the Institute overcomes such barriers. Barriers may include performance-related stipulations, limitations on the Institute's discretion over the use of awarded funds, and/or other stipulations related to the purpose of the contribution. Conditional contributions, undiscounted, totaled $47,727 and $57,326, and advance payments on such contributions totaled $2,501 and $3,274, at September 30, 2021 and 2020, respectively. Substantially all conditional contributions include donor-imposed purpose or time restrictions related to education and research. Advance payments are recorded in deferred revenues.

- *Grants and Contracts, Campus* – Revenues from grants and cooperative agreements designated for research generally are accounted for as contributions due to the lack of a commercial objective on the part of the sponsor. Such contributions generally are considered conditional due to the inclusion of barriers requiring adherence to specific costing principles and return-of-funds provisions. Generally, barriers to entitlement are removed, and revenue recognized, as allowable expenditures are incurred under such agreements. Cash and other assets received in excess of such expenditures or otherwise subject to conditions are recorded as deferred revenue. Conditional contributions related to sponsored research, undiscounted, totaled $234,126 and $220,546 at September 30, 2021 and 2020, respectively, and are not recorded in the financial statements. The Institute includes in conditional contributions only the unexpended portions of sponsored awards that the Institute has the right to expend without further action from the sponsor and/or a funding agency. Advance payments related to sponsored research totaled $15,647 and $10,277 at September 30, 2021 and 2020, respectively.

- *Recovery of indirect costs and allowances* – Substantially all Campus United States government grants and contracts provide for the reimbursement of indirect facilities and administrative costs and the recovery of graduate student tuition remission based on rates negotiated with the Office of Naval Research, the Campus' federal cognizant agency for negotiation and approval of such rates. Such reimbursements generally are recognized as related direct costs are incurred on applicable awards. Recoveries of such facilities and administrative costs were $87,041 and $92,867 for the years ended September 30, 2021 and 2020, respectively.

- *Other* – Rental revenues from leased properties and miscellaneous gains and losses are recognized as earned or realized. See Note L for additional information on leases.

Recognition of revenue from contracts with customers occurs as the Institute satisfies one or more performance obligations, which are promises in a contract to transfer a distinct good or service to a customer. The timing of billings, cash collections, and revenue recognition may result in contract assets and contract liabilities (deferred revenues) in the balance sheets. A description of the Institute's revenues from contracts with customers and contract assets and liabilities follows:

- *Tuition and fees* – All student tuition and fees and undergraduate room and board charges are recorded, net of applicable financial aid, as revenues during the year the related academic or other services are rendered and the Institute satisfies its performance obligations by providing instruction, room, and board, as applicable, to its students. Such charges totaled $123,208 and

$127,918, and financial aid totaled $92,339 and $86,992 for the years ended September 30, 2021 and 2020, respectively.

Payments received in advance of academic terms are recorded as deferred revenue. Total deferred revenue related to tuition, fees, room and board was $14,307 and $8,226, and accounts receivable related to tuition, fees, room and board was $150 and $494 at September 30, 2021 and 2020, respectively. Substantially all deferred revenue balances at September 30, 2020 were recognized as revenue during the fiscal year ended September 30, 2021, as performance obligations to provide instruction, room, and board were satisfied.

- *Jet Propulsion Laboratory operations* - The Institute's performance obligations under its cost-reimbursable contract with NASA for JPL (the "JPL Contract") are contained within separately identifiable, individually NASA-approved task orders created under the JPL Contract. The task order is NASA's stipulated method of planning, funding, and monitoring costs under the JPL Contract. The various task orders specify distinct scientific, engineering, and research scopes, from which NASA benefits directly or in combination with other work performed under the JPL Contract.

  The Institute satisfies its performance obligations under the JPL Contract on an over-time basis as it incurs allowable direct costs under authorized funded task orders, and therefore recognizes revenue as such costs are incurred. All goods and services furnished under the JPL Contract, which are measured by allowable costs incurred, immediately accrue to the benefit of NASA. NASA simultaneously receives and consumes the benefits of any services provided, obtains title to any assets purchased, and, by contract, prohibits the Institute from directing any alternative use of assets created under the JPL Contract.

  The Institute has a right to immediate reimbursement from NASA when allowable incurred costs are paid. The Institute collects its reimbursements under the JPL Contract through a letter of credit arrangement. JPL accounts receivable totaled $189,228 and $229,279 at September 30, 2021 and 2020, respectively.

  The Institute records contract assets equal to costs incurred under, but not yet billed to, the JPL Contract. Such costs, which are not billable to NASA until paid, are equal to the total of the unfunded portion of the accumulated postretirement benefit obligation, accrued vacation, and accrued workers' compensation liabilities and are described further in Note E. At September 30, 2021 and 2020, there were no deferred revenue or other contract liability balances related to JPL. Under the JPL Contract, the Institute also receives an annual negotiated reimbursement in lieu of indirect costs ("lump sum") and an annual fixed performance fee, which totaled $53,593 and $59,034 for the years ended September 30, 2021 and 2020, respectively. These recoveries are recorded on an over-time basis ratably over each fiscal year and are included in the line item "Recovery of indirect costs and allowances" in the statements of activities. The JPL Contract has no material variable consideration and no significant financing component.

  The current JPL Contract began October 1, 2018, and has a five-year term. At September 30, 2021, reimbursements of all costs under the contract over the five-year term were subject to an aggregate total of fifteen billion dollars. The Institute may be awarded up to five additional years under the contract based upon annual NASA evaluations of its performance. The first evaluation is complete and JPL earned two option years. NASA has not yet formally extended the contract.

The value of the Institute's future performance obligations under the JPL Contract is subject to change according to NASA's priorities and the results of JPL's scientific and engineering initiatives. Such performance obligations are subject to the availability of future NASA funding and, in certain cases, the future renewal or extension of the JPL Contract. Based upon the JPL Contract's maximum cost limit, the maximum remaining obligation to potentially be authorized under the JPL Contract was $7,131,197 and $9,562,765 at September 30, 2021 and 2020, respectively.

- *Sales and services* - Ancillary inflows from graduate housing, royalties, non-degree-granting educational activities, retail operations, and other agreements with customers are recorded as the Institute satisfies the related performance obligations. Generally, payment is due at the time goods or services are provided. There were no material deferred revenue or accounts receivable balances related to sales and services revenues at September 30, 2021 and 2020.

Campus recorded $79,055 and $47,585 in direct revenues from sponsored research activities accounted for as contracts with customers for the years ended September 30, 2021 and 2020, respectively. Those direct revenues are combined with conditional contribution revenues from either United States government or other Campus grants in the statements of activities. Related recoveries according to applicable indirect cost rates of $11,077 and $11,448 are included in the line item "Recovery of indirect costs and allowances" in the statements of activities for the years ended September 30, 2021 and 2020, respectively. There were no material deferred revenue or accounts receivable balances related to these contracts at September 30, 2021 and 2020.

(Dollars in Thousands)

Expenses

Campus expenses are reported in the statements of activities by natural classification. Institute expenses by functional classification were as follows for the years ended September 30, 2021 and 2020:

	Campus Program Activities					
September 30, 2021	Instruction and Academic Support	Organized Research	Auxiliary Enterprises	Institutional Support	JPL Operations	Total
Operating expenses:						
Compensation and benefits	$ 214,928	$ 147,478	$ 7,891	$ 67,414	$ 1,267,832	$ 1,705,543
Supplies and services	59,450	66,462	7,923	14,570	280,821	429,226
Subcontracts	1,646	53,886	-	-	800,566	856,098
Depreciation and amortization	31,009	48,022	8,364	2,924	-	90,319
Utilities	7,512	9,052	624	774	12,439	30,401
Interest	13,531	15,128	4,623	861	-	34,143
Total functional expenses	$ 328,076	$ 340,028	$ 29,425	$ 86,543	$ 2,361,658	$ 3,145,730
Non-operating expenses:						
Interest				$ 21,940		$ 21,940
Net periodic benefit costs				1,482	$ (10,266)	(8,784)

	Campus Program Activities					
September 30, 2020	Instruction and Academic Support	Organized Research	Auxiliary Enterprises	Institutional Support	JPL Operations	Total
Operating expenses:						
Compensation and benefits	$ 208,163	$ 145,358	$ 11,686	$ 66,544	$ 1,267,668	$ 1,699,419
Supplies and services	55,903	48,238	11,178	11,212	349,924	476,455
Subcontracts	2,041	39,634	-	-	984,341	1,026,016
Depreciation and amortization	27,637	37,671	8,449	3,579	-	77,336
Utilities	6,258	8,785	613	1,034	13,213	29,903
Interest	12,098	13,710	5,043	821	-	31,672
Total functional expenses	$ 312,100	$ 293,396	$ 36,969	$ 83,190	$ 2,615,146	$ 3,340,801
Non-operating expenses:						
Interest				$ 25,301		$ 25,301
Net periodic benefit costs				593	$ (9,148)	(8,555)

Institutional Support expenses include certain costs related to the administration of the Institute's contract with NASA for the operation of JPL. NASA reimbursed Caltech $22,593 and $28,034 for the years ended September 30, 2021 and 2020, respectively, related to such costs. These amounts represent the annual negotiated reimbursement in lieu of indirect costs ("lump sum") as described in the NASA Contract.

Auxiliary Enterprises expenses include the costs associated with revenue-generating supporting services, including undergraduate room and board, graduate and faculty housing, retail stores, and dining facilities.

Facilities operation and maintenance costs incurred centrally are allocated back to the functional expense classifications as follows: Depreciation related to buildings and improvements and other central facilities' operating costs are allocated based on square footage occupancy of Institute facilities, equipment depreciation is allocated based on average equipment purchases attributed to each classification, and interest on external debt, net of amounts capitalized, is allocated to categories that benefit from the proceeds of such debt based on occupancy.

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 return 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 operating expenses and related reimbursements; 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, for refunding of other bonds, or for operating purposes; net gains or losses on nonrecurring transactions; actuarial adjustments related to annuity and trust agreements; changes in deferred tax assets and liabilities, gains and losses on retirement of indebtedness; and donor redesignations and other reclassifications of net assets.

Tax Status

Except as noted below, 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, 2021 and 2020, the Institute maintained a full valuation allowance on its deferred tax assets. The valuation allowance reduced net deferred tax assets, which are primarily due to tax losses from certain investment activities, to a value of $0. Based on its analysis of the uncertainties surrounding both the timing and amounts of potential future net taxable income, the Institute has assumed 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, 2021 and 2020.

The Federal Tax Cuts and Jobs Act ("TCJA") of 2017 includes several provisions that impact the Institute, including an excise tax on net investment income and revised methods for calculating unrelated business income. At September 30, 2021 and 2020, the Institute recorded $15,715 and $0, respectively, in deferred tax liabilities related to the excise tax on net investment income.

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 and in accordance with the Institute's policies and procedures governing potential conflicts of interest.

Accounting Pronouncements Adopted
During the year ended September 30, 2021, the Institute adopted Accounting Standards Update ("ASU") ASU 2016-02, *Leases*. The standard requires recognition of rights and obligations arising from lease contracts, including existing and new arrangements, as assets and liabilities, respectively, in the Institute's balance sheets. The Institute adopted the standard effective October 1, 2020. As part of this adoption, the Institute elected the available package of practical expedients, which permitted the Institute not to reassess prior conclusions about lease identification, lease classification and initial direct costs for expired or existing leases. The Institute also elected the hindsight practical expedient to determine the lease term for existing leases, which permitted the Institute to consider available information prior to the effective date of the new standard as to the actual or likely exercise of options to extend or terminate applicable leases. Additionally, as permitted under the guidance, the Institute elected not to record on the balance sheet leases with an initial term of 12 months or less. The Institute also elected an available practical expedient to account for lease and non-lease components on a combined basis for housing arrangements in which the Institute is a lessor. For all other leases, the Institute will continue to account for lease and non-lease components separately. Adoption of this ASU had no material changes to the presentation of the Institute's financial statements or its disclosures. Prior period amounts have not been restated in connection with the adoption of this standard.

In August 2018, FASB issued ASU 2018-13, *Fair Value Measurement Disclosure Framework*. The Institute adopted ASU 2018-13 for the fiscal year ended September 30, 2021. This standard removes certain disclosures, modifies other disclosures and adds additional disclosures related to fair value measurement. The adoption of this ASU did not require material changes to the presentation of the Institute's financial statements.

New Accounting Pronouncements
In June 2016, the FASB issued ASU 2016-13, *Financial instruments - Credit losses (Topic 326): Measurement of credit losses on financial instruments*. Topic 326 amends guidance on reporting credit losses for assets held at amortized cost basis and available for sale debt securities. For assets held at amortized cost basis, Topic 326 eliminates the probable initial recognition threshold in current generally accepted accounting principles (GAAP) and, instead, requires an entity to reflect its current estimate of all expected credit losses. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial assets to present the net amount expected to be collected. This amendment affects entities holding financial assets and net investment in leases that are not accounted for at fair value through net income. The amendments affect loans, debt securities, trade receivables, net investments in leases, off balance sheet credit exposures, reinsurance receivables, and any other financial assets not excluded from the scope that have the contractual right to receive cash. ASU 2016-13 is effective for the Institute's fiscal year ending September 30, 2024. The Institute is evaluating the impact of this standard to its financial statements and disclosures.

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other- Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud*

Computing Arrangement That Is a Service Contract. ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by these amendments. ASU 2018-15 is effective for the Institute's fiscal year ending September 30, 2022. The Institute is evaluating the impact of this standard to its financial statements and disclosures.

In September 2020, the FASB issued ASU 2020-07, *Not-for-Profit Entities (Topic 958): Presentation and Disclosures by Not-for-Profit Entities for Contributed Nonfinancial Assets*. The amendments increase the transparency of contributed nonfinancial assets for not-for-profit (NFP) entities through enhancements to presentation and disclosure. The amendments address certain stakeholders' concerns about the lack of transparency about the measurement of contributed nonfinancial assets recognized by NFPs, as well as the amount of those contributions used in an NFP's programs and other activities. The term nonfinancial asset includes fixed assets (such as land, buildings, and equipment), use of fixed assets or utilities, materials and supplies, intangible assets, services, and unconditional promises of those assets. The amendments should be applied on a retrospective basis. ASU 2020-07 is effective for the Institute's fiscal year ending September 30, 2022. The Institute is evaluating the impact of this standard to its financial statements and disclosures.

Other Reporting Matters

In March 2020, the World Health Organization declared a pandemic, the United States declared a national emergency, and both the State of California and the County of Los Angeles ordered significant restrictions on businesses and the public in response to the emergence of a novel coronavirus (COVID-19). As a result, the Institute suspended many Campus and JPL activities and instituted remote instruction and work arrangements for a significant portion of its students, faculty, and staff. The Institute continues to focus its pandemic response, planning, and decision-making processes on the Institute's top priorities of health and safety, continuity of research and instruction, and faculty and student recruitment and retention. Pandemic-related facilities closures and remote work and instruction caused reductions in auxiliary revenues, and increased health and safety measures have increased certain expenses. The full extent of the impact of COVID-19 on the Institute's finances is uncertain and will depend on the duration and depth of the pandemic and therefore cannot be determined at this time.

C. Contributions Receivable, net

Contributions receivable consists of unconditional promises to give to the Institute in the future. Individual contributions receivable are initially recorded at fair value, including discounts to present values of the future cash flows at appropriate credit risk-adjusted rates, and are classified in Level 3 of the valuation hierarchy described in Note K. Discount rates on outstanding contributions receivable at September 30, 2021 and 2020 range from 0.32% to 3.53%.

(Dollars in Thousands)

Collections of contributions receivable were expected as follows at September 30, 2021 and 2020:

	2021	2020
Within one year	$ 91,750	$ 43,514
Between one year and five years	89,421	102,300
More than five years	17,163	22,100
Gross contributions receivable	198,334	167,914
Less:		
Unamortized discounts	5,919	8,215
Allowance for uncollectible contributions	181	241
Net contributions receivable	$ 192,234	$ 159,458

Net contributions receivable carried the following donor-imposed restrictions at September 30, 2021 and 2020:

	2021	2020
Endowment	$ 84,639	$ 61,170
Building and building improvements	34,318	14,055
Other purpose and/or time restrictions	73,277	84,233
Net contributions receivable	$ 192,234	$ 159,458

At September 30, 2021 and 2020, net promises totaling $78,480 and $84,949, respectively, were due from Institute trustees, their estates, and charitable entities founded by Institute trustees.

(Dollars in Thousands)

D. Investments

Investments consisted of the following at September 30, 2021 and 2020:

	2021	2020
Short-term investments	$ 304,839	$ 295,037
Fixed-income securities	145,737	162,102
Equity securities	1,930,413	1,631,221
Alternative investments:		
Alternative securities	1,163,674	912,146
Private equity	961,839	623,861
Real assets	438,467	346,804
Derivatives, net	-	450
Total investments	$ 4,944,969	$ 3,971,621

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 equivalents invested in prime, U.S. government, and government agency money-market funds.

- *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 markets, developed international markets, 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 other than private equity funds and real assets funds 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 primarily 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.

(Dollars in Thousands)

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 managers.

- *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.

- *Derivatives*, *net* consist of options and futures in which the Institute directly transacts to manage equity and foreign exchange risks of certain investments.

Investments were held as follows at September 30, 2021 and 2020:

	2021	2020
Investment pool	$ 4,011,978	$ 3,062,568
Separately invested endowments	37,098	45,681
Trusts, annuities, and other	895,893	863,372
Total investments	$ 4,944,969	$ 3,971,621

At September 30, 2021 and 2020, endowment investments were $4,022,359 and $3,085,500, respectively. At September 30, 2021 and 2020, other investments included $29,303 and $16,544, respectively, held in separately invested accounts as required by donors and/or sponsors.

Investment return, which consists of interest and dividend income and net realized and unrealized gains and losses, net of fees, was $1,131,751 and $215,252 for the years ended September 30, 2021 and 2020, respectively.

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.

(Dollars in Thousands)

Deferred United States government billings related to deferred reimbursements of the following liabilities at September 30, 2021 and 2020:

	2021	2020
Unfunded postretirement benefit obligation	$ 239,782	$ 291,982
Accrued vacation	102,502	99,006
Accrued workers' compensation expense	2,978	4,142
Total deferred United States government billings	$ 345,262	$ 395,130

F. Property, Plant, and Equipment, net

Property, plant, and equipment consisted of the following at September 30, 2021 and 2020:

	2021	2020
Land and land improvements	$ 87,837	$ 83,950
Buildings and building improvements	1,550,546	1,294,631
Equipment	672,363	650,183
Construction in progress	69,680	278,969
Less: accumulated depreciation	(1,221,273)	(1,139,457)
Total property, plant, and equipment, net	$ 1,159,153	$ 1,168,276

Depreciation expense for the years ended September 30, 2021 and 2020 was $88,885 and $75,947, 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, 2021 and 2020:

			Interest rate	Outstanding	
		Maturity	**2021 / 2020**	**2021**	**2020**
Bonds payable:					
Taxable bonds (interest rates listed at coupon):					
Series 2019		2119	3.65%	$ 500,000	$ 500,000
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, with variable rates (prior to being synthetically fixed through swap agreements, where applicable):					
2006 Series A		2036	0.05% / 0.11%	82,500	82,500
2006 Series B		2036	0.05% / 0.12%	82,500	82,500
Series 1994		2024	0.05% / 0.12%	30,000	30,000
Total bonds payable, gross				1,595,000	1,595,000
Unamortized original issue premiums/discounts and issuance costs, net				(15,693)	(15,948)
Total bonds payable, net				1,579,307	1,579,052
Notes payable:	**Maximum**				
Variable rate facilities:					
General working capital and capital projects:					
JPMorgan Chase revolving bank credit facility	$ 100,000	2024	0.58% / 0.53%	45,000	14,000
U.S. Bank revolving bank credit facility	100,000	2023	- / 0.64%	-	25,000
U.S. Bank revolving bank credit facility	50,000	None	- / 0.54%	-	50,000
JPMorgan Chase revolving bank credit facility	50,000	2021	- / -	-	-
City National Bank revolving bank credit facility	50,000	2021	- / -	-	-
Bank of America revolving bank credit facility	50,000	2023	- / -	-	-
PNC Bank revolving bank credit facility	50,000	2024	- / -	-	-
Supplemental liquidity for variable rate debt:					
Northern Trust revolving bank credit facility	50,000	2023	- / -	-	-
Northern Trust revolving bank credit facility	50,000	2021	- / -	-	-
TD Bank revolving bank credit facility	50,000	2022	- / -	-	-
Total notes payable				45,000	89,000
Total bonds and notes payable, net				$ 1,624,307	$ 1,668,052

(Dollars in Thousands)

As of September 30, 2021, the Institute had eight unsecured revolving lines of credit available (collectively, the "Lines of Credit"). Maturity dates for individual advances made under the Lines of Credit are determined at the time advances are made. At September 30, 2021 and 2020, the Institute had internally-mandated aggregate borrowing limits for 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 to preserve liquidity. The $50,000 line of credit from U.S. Bank is uncommitted.

The City National Bank and JPMorgan Chase revolving lines of credit, each with a permitted maximum draw of $50,000 expired on June 29, 2021 and April 27, 2021, respectively.

During the year ended September 30, 2021, the Institute established two new revolving bank credit facilities: One with Bank of America, that permits a maximum draw of $50,000 and matures in May 2023, and another with PNC Bank that permits a maximum draw of $50,000 and matures in May 2024. The Institute also terminated a $100,000 revolving line of credit with JP Morgan Chase and replaced it with a new revolving credit facility that permits a maximum draw of $100,000 and matures in April 2024.

Subsequent to September 30, 2021, the Institute extended its $50,000 revolving line of credit with Northern Trust originally maturing in December 2021 to mature in December 2022 and extended its $50,000 revolving line of credit with Northern Trust originally maturing in December 2023 to mature in December 2024.

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, 2021, 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, 2021 in the following table.

Future principal repayments on bonds and notes payable were as follows at September 30, 2021:

Year Ending September 30	Amount
2022	$ 240,000
2023	-
2024	-
2025	-
2026	-
Thereafter	1,400,000
Total	$ 1,640,000

(Dollars in Thousands)

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, equal to 67% of one-month LIBOR (resulting in a rate of approximately 0.054% at September 30, 2021), on a $165,000 underlying notional principal amount.

The interest rate 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. The fair value of the swap was a liability of $56,342 and $76,091 at September 30, 2021 and 2020, respectively, and is included in the line item "Accounts payable and accrued expenses" in the balance sheets. Costs of regular settlements with the counterparty of $5,729 and $4,787 during the years ended September 30, 2021 and 2020, respectively, are included in the expense line item "Interest" in the statements of activities. Changes in the swap's fair value during the years ended September 30, 2021 and 2020 resulted in unrealized gains/(losses) of $19,748 and $(13,561), respectively, which are included in non-operating changes in net assets in the statements of activities.

H. Net Assets

Net Assets with Donor Restrictions

The Institute's net assets with donor restrictions were held as follows at September 30, 2021 and 2020:

	2021	2020
Time or purpose:		
Endowment	$ 1,321,963	$ 674,849
Contributions receivable	107,595	98,288
Education and research funds	181,993	156,080
Life income and annuity funds	39,083	30,366
Total net assets with time or purpose restrictions	$ 1,650,634	$ 959,583
Perpetual:		
Endowment	$ 1,870,945	$ 1,763,554
Contributions receivable	84,639	61,170
Life income and annuity funds	53,304	43,234
Student loan funds	18,948	19,340
Total net assets with perpetual restrictions	$ 2,027,836	$ 1,887,298
Total net assets with donor restrictions	$ 3,678,470	$ 2,846,881

Endowment Net Assets (including Funds Functioning as Endowment)

Endowment net assets constitute the largest component of the Institute's net assets and are comprised of more than 1,000 donor-restricted and board-designated funds held primarily for long-term investment that supports educational, research, and general operating activities of the Institute. All endowment assets are held in a consolidated investment pool unless special considerations or donor stipulations require that they be invested separately. Gift annuities, beneficial interests, contributions receivable, and unexpended endowment distributions 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 net assets with donor restrictions that are perpetual in nature: 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 for which the remaining donor restrictions are not perpetual in nature, and which consist primarily of accumulated investment return, are considered donor-restricted as to time and purpose until those amounts are appropriated for expenditure by the Institute in a manner consistent with the standard of prudence prescribed by UPMIFA and by Institute policies, and are expended accordingly.

The Institute's endowment (including funds functioning as endowment) spending policy includes a Board of Trustees-approved endowment spending formula that takes into consideration the prior year's allowed formulaic spending, inflation factors, and endowment growth. In accordance with UPMIFA, the policy also includes the following factors for consideration by the Board of Trustees when determining the annual amount to be made available for distribution to the operating budget each year:

- The purposes of donor-restricted endowment funds
- The duration and preservation of such funds
- General economic conditions
- Possible effects of inflation and deflation
- The expected total return from investment 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 authorized spending rates and, if applicable, the incurrence of specific expenditures in accordance with donor-imposed 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, but not limited to, investments in public markets, private equity, real assets, and 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, 2021 and 2020:

September 30, 2021	**Without Donor Restrictions**	**With Donor Restrictions**	**Total**
Donor-restricted endowment funds	$ -	$ 3,188,484	$ 3,188,484
Board-designated endowment funds	848,658	4,424	853,082
Total endowment net assets	$ 848,658	$ 3,192,908	$ 4,041,566
September 30, 2020			
Donor-restricted endowment funds	$ -	$ 2,435,809	$ 2,435,809
Board-designated endowment funds	662,188	2,594	664,782
Total endowment net assets	$ 662,188	$ 2,438,403	$ 3,100,591

Changes in endowment net assets for the years ended September 30, 2021 and 2020 were as follows:

	Without Donor Restrictions	**With Donor Restrictions**	**Total**
October 1, 2019	$ 654,988	$ 2,331,672	$ 2,986,660
Investment return, net	46,581	166,941	213,522
Contributions and pledge payments	-	66,725	66,725
Additions to board-designated endowments	10,387	-	10,387
Available for expenditure	(36,532)	(133,132)	(169,664)
Redesignations, reclassifications, and other	(13,236)	6,197	(7,039)
September 30, 2020	$ 662,188	$ 2,438,403	$ 3,100,591
Investment return, net	212,135	791,255	1,003,390
Contributions and pledge payments	-	100,470	100,470
Additions to board-designated endowments	24,782	-	24,782
Available for expenditure	(36,936)	(136,981)	(173,917)
Redesignations, reclassifications, and other	(13,511)	(239)	(13,750)
September 30, 2021	$ 848,658	$ 3,192,908	$ 4,041,566

The line item “Redesignations, reclassifications, and other” in the table above includes the effects of changes in donor-imposed restrictions or Institute designations and certain endowment management costs.

(Dollars in Thousands)

Under Accounting Standards Codification 958, for accounting purposes the Institute must maintain the historical values of underwater donor-restricted endowment funds as net assets subject to donor restrictions that are perpetual in nature. Deficiencies in fair value of such funds relative to their historical values reduce the portion of net assets with donor restrictions that is subject to time and/or purpose restrictions, and diminish with fair value appreciation. Aggregate fair value and historical cost of underwater endowments at September 30, 2020 were $213,840 and $226,303, respectively, causing a deficiency of $12,463. There were no underwater endowments at September 30, 2021.

The Institute's endowment spending policy and applicable laws permit the appropriation of endowment spending from underwater funds unless prohibited by donor-imposed restrictions. During the years ended September 30, 2021 and 2020, the Institute appropriated spending of $0 and $12,052, respectively, from certain underwater funds in accordance with the policy, so as not to suspend certain Institute programs. The policy requires the Institute's management to monitor and approve spending from underwater funds annually on a fund-by-fund basis and to report annually to the Board of Trustees regarding underwater funds.

I. Postretirement and Postemployment Benefits

Postretirement Health and Life Insurance

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 at the end of this note.

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, 2021 and 2020. Additional detail regarding the JPL and Campus-related portions of the funded status of postretirement benefits is provided at the end of this note.

	2021	2020
Change in the accumulated postretirement benefit obligation:		
Benefit obligation at beginning of year	$ 617,092	$ 545,658
Service cost	17,501	16,285
Interest cost	18,235	17,795
Benefits paid	(14,711)	(14,142)
Actuarial (gain)/loss	(25,139)	51,496
Benefit obligation at end of year	612,978	617,092
Changes in plan assets:		
Fair value of plan assets at beginning of year	162,076	123,759
Return on plan assets	26,805	16,961
Employer contributions	36,025	35,498
Benefits paid	(14,711)	(14,142)
Fair value of plan assets at end of year	210,195	162,076
Funded status	$ (402,783)	$ (455,016)

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, 2021 and 2020, 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, 2021 and 2020:

	2021	2020
Short-term investments	$ 523	$ 2,138
Collective trust funds	63,767	47,840
Mutual funds	145,905	112,098
Total investments	$ 210,195	$ 162,076

Net periodic postretirement benefit cost ("NPBC"), or the amount recorded as expense related to postretirement health and life insurance benefits attributable a particular year, was as follows for the years ended September 30, 2021 and 2020:

	2021	2020
Components of net periodic postretirement benefit cost:		
Service cost	$ 17,501	$ 16,285
Other components:		
Interest cost	18,235	17,795
Expected return on plan assets	(9,961)	(7,650)
Amortization of prior year service credit	(26,305)	(26,305)
Amortization of loss	9,247	7,605
Total other components	(8,784)	(8,555)
Net periodic benefit cost	$ 8,717	$ 7,730

The statements of activities include both the components of NPBC and the effects of changes in funded status that are not otherwise recognized in NPBC. For the years ended September 30, 2021 and 2020, service costs related to Campus totaling $4,618 and $4,441, respectively, are included in the financial statement line item "Compensation and benefits," and service costs related to JPL totaling $12,883 and $11,844, respectively, are included in the financial statement line item "Jet Propulsion Laboratory operations."

(Dollars in Thousands)

For the years ending September 30, 2021 and 2020, the following are included in the non-operating statement of activities line item "Changes in benefit obligations and related recoveries, net":

	2021	2020
Other components of NPBC, Campus	$ (1,482)	$ (593)
Other components of NPBC, JPL	10,266	9,148
Non-periodic changes in obligation, Campus	2,418	(17,228)
Non-periodic changes in obligation, JPL	22,507	(43,657)
JPL Contract recoveries	(32,773)	34,509
Changes in benefit obligation and other recoveries, net	$ 936	$ (17,821)

Non-periodic changes in the benefit obligation for both Campus and JPL represent changes in the benefit obligation not otherwise recognized in NPBC. JPL contract revenue equal to the sum of JPL's other components of NPBC and non-periodic changes in the benefit obligation related to JPL is included as an offsetting recovery, as any costs associated with JPL are contractually recoverable from NASA.

At September 30, 2021 and 2020, the differences recognized in net assets without donor restrictions between cumulative net periodic postretirement benefit cost, less cumulative contributions, and funded status were as follows:

	2021	2020
Prior service credit	$ (12,499)	$ (18,876)
Net loss	41,796	50,591
Cumulative amounts recognized in net assets without donor restrictions	$ 29,297	$ 31,715

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 estimated actuarial loss of $5,760 will be amortized into net periodic benefit cost during the year ending September 30, 2022.

(Dollars in Thousands)

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, 2021 and 2020:

	2021	2020
Discount rate	3.00%	3.30%
Discount rate for service cost	3.30%	3.40%
Expected return on plan assets	5.75%	5.75%
Health care cost trend rate	6.75%	7.00%

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 returns are based on expected returns for various asset categories. The evaluation of the historical and future returns resulted in the selection of 5.75% and 5.75%, respectively, for the years ended September 30, 2021 and 2020.

The following weighted-average assumptions were used to determine the Institute's obligation under the plans at September 30, 2021 and 2020:

	2021	2020
Discount rate	2.90%	3.00%
Discount rate for service cost	3.00%	3.30%
Health care cost trend rate	6.50%	6.75%

The Institute's postretirement medical benefit plans provide a substantial portion of the Institute's retirees and their eligible dependents annual 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 based on health care cost trend rates. The assumed health care cost trend rate is a 6.75% increase in 2021, after which annual rates of increase are assumed to decrease approximately 0.25% per year until 2030, after which healthcare cost is assumed to increase 4.25% annually in all future years. The effects of changes in these rates are not expected to be material to the benefit obligation or to related amounts recoverable from NASA.

(Dollars in Thousands)

At September 30, 2021, the estimated future benefit payments are as follows:

Year Ending September 30	Campus	JPL	Total
2022	$ 4,750	$ 12,920	$ 17,670
2023	5,029	13,550	18,579
2024	5,338	14,169	19,507
2025	5,679	14,802	20,481
2026	6,031	15,448	21,479
2027-2031	34,650	87,284	121,934

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, 2021 and 2020 is as follows:

	Campus	JPL	Total
September 30, 2021			
Benefit obligation at end of year	$ 163,001	$ 449,977	$ 612,978
Fair value of plan assets at end of year	-	210,195	210,195
Funded status	$ (163,001)	$ (239,782)	$ (402,783)
September 30, 2020			
Benefit obligation at end of year	$ 163,034	$ 454,058	$ 617,092
Fair value of plan assets at end of year	-	162,076	162,076
Funded status	$ (163,034)	$ (291,982)	$ (455,016)

Defined Contribution Program

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, 2021 and 2020 were $28,633 and $29,220, respectively, for the Campus and $101,975 and $100,104, respectively, for JPL. The Institute has no assets or liabilities related to these plans.

At September 30, 2021 and 2020, the balance sheet line item "Prepaid expenses and other assets" included $137,965 and $115,459, respectively, 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 as further described in Note K. Level 1 assets consist of mutual funds that are traded on exchanges and similar platforms. Level 2 assets include funds comprised of equity securities and fixed income instruments. Level 3 assets consist primarily of fixed annuity contracts. The Institute's liabilities related to these funds were $137,432 and $114,775 at September 30, 2021 and 2020, respectively, and are included in the line item "Accrued compensation and benefits" in the balance sheets.

(Dollars in Thousands)

J. Liquidity and Funds Available for General Expenditure

The Institute manages its financial assets and liquidity resources in order to provide cash for payment of general expenditures, such as operating expenses, construction costs, and principal payments on debt. Financial assets classified below as available for general expenditure within one year, computed in accordance with ASC 958, are those that are considered both convertible to cash and free of donor-imposed and/or contractual restrictions that would limit or prevent the use of such cash to fund general expenditures.

At September 30, 2021 and 2020, the Institute's financial assets and liquidity resources available for general expenditure within one year were as follows:

	2021	2020
Financial assets available within one year:		
Cash and cash equivalents	$ 62,429	$ 46,908
Accounts and notes receivable, net	252,829	290,556
Expected pledge payments available for operations	40,371	23,687
Other investments	504,415	619,160
Investments and gains subject to subsequent year's endowment spending	169,105	167,556
Total	1,029,149	1,147,867
Liquidity resources:		
Committed lines of credit	$ 450,000	$ 450,000
Less: current borrowings under lines of credit	(45,000)	(89,000)
Total	405,000	361,000
Total financial assets and liquidity resources available within one year	$ 1,434,149	$ 1,508,867

As detailed in Note G, the Institute maintains certain internally imposed limits on the use of its lines of credit for operating, liquidity, and construction purposes. Those limits may be changed with the concurrence of the Institute's Board of Trustees and therefore, such internally imposed limits have been omitted from the Institute's determination of available liquidity resources.

Under the Institute's cash management policies, cash received from endowment spending related to either funds functioning as endowment or donor-restricted endowments is available for appropriate general expenditure. Endowment spending distributed from donor-restricted endowments is reflected in the Institute's records as net assets with donor restrictions until the expenditures actually are incurred; such expenditures are funded by available financial assets and/or liquidity resources at the time they are paid.

Although the Institute does not normally intend to use endowment resources in excess of amounts appropriated annually according to its endowment spending policy, at September 30, 2021 and 2020, the Institute had $848,658 and $662,188, respectively, in funds functioning as endowment and included in net assets without donor restrictions that were available for general expenditure, subject to the concurrence of the Board of Trustees. Various redemption restrictions on underlying endowment investments could reduce the amount of cash immediately available from a redemption of a significant amount of funds functioning as endowment.

As noted in Note L, the Institute was committed to fund certain construction and services contracts from available financial assets and liquidity resources in the amount of $114,198 at September 30, 2021.

K. Fair Value

Fair value under GAAP 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 private company securities, investments in real asset interests (comprised of oil and gas interests and real property), and beneficial interests.

The Institute's level 3 private equity holdings consist of investments in private equity managers' investment funds. Private company investment valuations are obtained directly from the respective investment managers or from third-party appraisals and are determined using industry-standard methodologies that generally involve the use of valuation multiples or discounted cash flows. Significant increases or decreases in discount rates and valuation multiples in isolation may result in significantly different values.

Level 3 oil and gas interests primarily consist of investments in oil and gas investment managers' funds. The Institute obtains oil and gas fund valuations directly from investment managers. Valuations are determined using industry-standard methodologies that mainly employ market comparables and discounted cash flows. Significant increases or decreases in commodity prices and discount rates in isolation may result in significantly different values.

Level 3 investments in real property consist of investments in real property investment managers' funds and direct holdings of real property. The Institute obtains real property fund valuations directly from the respective investment managers. Valuations are determined using industry-standard methodologies that generally involve the use of location-adjusted capitalization rates, market comparables, and discounted cash flows. Significant increases or decreases in real property capitalization rates, discount rates, and market prices may result in significantly different values.

The fair value of beneficial interests is determined using the income approach and calculated using a discounted cash flow analysis based on the expected payments to be made over the remaining life of each respective beneficial interest. The primary unobservable inputs for beneficial interests are the applicable discount rates, which range from 0.4%-10.6%, and applicable estimated remaining life expectancies of benefactors, which range from 2-44 years. For the year ended September 30, 2021, the weighted-average discount rate was 5.8% and the weighted-average life expectancy was 10.6 years. Significant increases or decreases in discount rates and life expectancies in isolation may result in significantly different values.

The Institute regularly monitors the adequacy of its level 3 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, 2021 and 2020.

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, NAVs 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.

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, 2021 and 2020. The fair value of assets held in trust for postretirement benefit plans, as disclosed in Note I, is excluded from the tables.

(Dollars in Thousands)

	Level 1	Level 2	Level 3	NAV	2021 Total
September 30, 2021					
Investments:					
Short-term investments	$ 304,839	$ -	$ -	$ -	$ 304,839
Fixed-income securities	105,211	40,526	-	-	145,737
Equity securities	653,496	585,424	20,959	670,534	1,930,413
Alternative investments:					
Alternative securities	-	-	-	1,163,674	1,163,674
Private equity	-	-	79,717	882,122	961,839
Real assets	-	-	169,210	269,257	438,467
Derivative assets	-	-	-	-	-
Total investments	$ 1,063,546	$ 625,950	$ 269,886	$ 2,985,587	$ 4,944,969
Other assets and liabilities:					
Beneficial interests	$ -	$ -	$ 37,807	$ -	$ 37,807
Defined contribution plan assets	62,311	41,301	34,353	-	137,965
Defined contribution plan liabilities	(61,836)	(41,269)	(34,327)	-	(137,432)
Interest rate swap	-	(56,343)	-	-	(56,343)

	Level 1	Level 2	Level 3	NAV	2020 Total
September 30, 2020					
Investments:					
Short-term investments	$ 295,037	$ -	$ -	$ -	$ 295,037
Fixed-income securities	104,324	57,778	-	-	162,102
Equity securities	520,904	509,645	40,309	560,363	1,631,221
Alternative investments:					
Alternative securities	-	-	-	912,146	912,146
Private equity	-	-	50,008	573,853	623,861
Real assets	-	585	151,067	195,152	346,804
Derivative assets	450	-	-	-	450
Total investments	$ 920,715	$ 568,008	$ 241,384	$ 2,241,514	$ 3,971,621
Other assets and liabilities:					
Beneficial interests	$ -	$ -	$ 27,077	$ -	$ 27,077
Defined contribution plan assets	48,921	33,368	33,170	-	115,459
Defined contribution plan liabilities	(48,370)	(33,271)	(33,134)	-	(114,775)
Interest rate swap	-	(76,091)	-	-	(76,091)

(Dollars in Thousands)

At September 30, 2021 and 2020, additional details regarding the Institute's investments valued using NAV by major investment category were as follows:

	Fair Value	Unfunded Commitments	Normally Allowable Redemption Frequency	Redemption Notice Period in days	Lives in years
September 30, 2021					
Equity securities:					
Quarterly or less	$ 303,063	$ -	Quarterly or less	60 to 180	-
Greater than quarterly	366,955	-	Annually to triennially	60 to 120	-
Not actionable	516	-	Not actionable	-	-
Alternative investments:					
Alternative securities					
Quarterly or less	246,264	-	Quarterly or less	45 to 90	-
Greater than quarterly	630,737	-	Quarterly to triennially	30 to 180	-
Not actionable	286,673	231,060	Not actionable	-	up to 15
Private equity					
Greater than quarterly	40,108	12,110	Every four years	270	-
Not actionable	842,014	244,083	Not actionable	-	up to 10
Real assets	269,257	163,066	Not actionable	-	up to 12
Total	$ 2,985,587	$ 650,319			

	Fair Value	Unfunded Commitments	Normally Allowable Redemption Frequency	Redemption Notice Period in days	Lives in years
September 30, 2020					
Equity securities:					
Quarterly or less	$ 171,689	$ -	Quarterly or less	60 to 180	-
Greater than quarterly	388,159	-	Annually to triennially	60 to 120	-
Not actionable	515	-	Not actionable	-	-
Alternative investments:					
Alternative securities					
Quarterly or less	197,354	-	Quarterly or less	30 to 150	-
Greater than quarterly	465,556	-	Semi-annually to triennially	60 to 180	-
Not actionable	249,236	161,961	Not actionable	-	up to 16
Private equity					
Greater than quarterly	26,501	719	Every four years	270	-
Not actionable	547,352	199,372	Not actionable	-	up to 10
Real assets	195,152	140,583	Not actionable	-	up to 12
Total	$ 2,241,514	$ 502,635			

(Dollars in Thousands)

In addition to the unfunded commitments noted above, at September 30, 2021 and 2020, the Institute was committed to invest an additional $32,950 and $34,569, respectively, in investments classified within the fair value hierarchy over approximately the next ten years. All such investment commitments are expected to be funded from existing or forecasted investment assets.

The methods described above may produce fair value calculations that might not be indicative of net realizable value or reflective of future fair values and do not include potential transaction costs or discounts or premiums, if any. Alternative investments may not be readily marketable or redeemable, and may contain 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 and/or assumptions to determine fair values of certain financial instruments could result in different estimates of fair value.

The following table presents a summary of changes in the fair values of the Institute's Level 3 assets for the years ended September 30, 2021 and 2020:

	Beginning Balance	Gifts and Purchases	Sales and Maturities	Realized Gain/(Loss)	Unrealized Gain/(Loss)	Transfers In	Transfers Out	Ending Balance
September 30, 2021								
Investments:								
Equity securities	$ 40,309	$ 2,964	$ (370)	$ 273	$ 102	$ -	$ (22,319)	$ 20,959
Alternative investments:								
Private equity	50,008	10,001	(3,225)	(23)	22,956	-	-	79,717
Real assets	151,067	17,479	(7,001)	(55)	7,720	-	-	169,210
Total investments	$ 241,384	$ 30,444	$ (10,596)	$ 195	$ 30,778	$ -	$ (22,319)	$ 269,886
Other assets:								
Beneficial interests	$ 27,077	$ 10,984	$ (3,190)	$ -	$ 2,936			$ 37,807
Defined contribution plans	33,170	3,370	(3,336)	1,149	-			34,353

	Beginning Balance	Gifts and Purchases	Sales and Maturities	Realized Gain/(Loss)	Unrealized Gain/(Loss)	Transfers In	Transfers Out	Ending Balance
September 30, 2020								
Investments:								
Equity securities	$ 36,798	$ 2,847	$ (205)	$ (4,622)	$ 5,491	$ -	$ -	$ 40,309
Alternative investments:								
Private equity	56,890	262	(12,680)	10,905	(5,369)	-	-	50,008
Real assets	148,894	4,966	(6,753)	49	3,911	-	-	151,067
Total investments	$ 242,582	$ 8,075	$ (19,638)	$ 6,332	$ 4,033	$ -	$ -	$ 241,384
Other assets:								
Beneficial interests	$ 29,639	$ 11,420	$ (13,849)	$ -	$ (133)	$ -	$ -	$ 27,077
Defined contribution plans	32,622	3,908	(4,143)	-	783	-	-	33,170

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.

During the years ended September 30, 2021 and 2020, unrealized gains of $2,586 and unrealized losses of $173, respectively, related to Level 3 assets were recorded in the non-operating line item "Gifts and pledges" in the statement of activities. All other realized and unrealized gains related to Level 3 investments were recorded in the non-operating line item "Investment return in excess (deficit) of endowment spending" in the statements of activities.

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.

L. Contingencies and Commitments

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 of the NASA/JPL Superfund site, estimated to be in excess of $100,000. 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 $114,198 and $111,483 at September 30, 2021 and 2020, respectively.

The Institute is a member of an international consortium that was organized to construct and operate an advanced telescope. In addition to the above, at September 30, 2021 and 2020, the Institute was committed to provide cash totaling approximately $44,000 and $47,000, respectively, to the consortium over approximately the next two years. Payments and other transfers related to this commitment are subject to certain contingencies.

(Dollars in Thousands)

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, 2021 and 2020, the amounts of the letter of credit facility were $9,461 and $8,694, respectively. The letter of credit was not used during the years ended September 30, 2021 and 2020, 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. Current annual costs are not expected to exceed $9,000. The expected duration of such annual payments is not determinable.

The Institute leases equipment and buildings, primarily for JPL, under operating leases expiring at various dates through 2026. Rent expense incurred under operating lease obligations was $8,935 and $5,350 for the years ended September 30, 2021 and 2020, respectively.

At September 30, 2021, future minimum payments under operating leases of greater than one year in duration were as follows:

Year Ending September 30	Amount
2022	$ 3,439
2023	3,614
2024	205
2025	-
2026	-
Total	$ 7,258

Approximately $7,258 of the future minimum lease payments listed above is expected to be recoverable from NASA 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 2026. Rental income under operating leases was $4,081 and $3,768 for the years ended September 30, 2021 and 2020, respectively.

(Dollars in Thousands)

At September 30, 2021, minimum future rental revenues from operating leases of greater than one year in duration were as follows:

Year Ending September 30	Amount
2022	$ 3,506
2023	3,214
2024	3,046
2025	2,563
2026	2,563
Total	$ 14,892

M. Supplemental Cash Flow Information

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

	2021	2020
Cash paid during the year for interest, net of amounts capitalized	$ 55,612	$ 55,413
Income and excise tax paid	1,077	1,861
Non-cash investing and financing activities:		
Securities received to satisfy pledge payments	57,734	14,280
In-kind receipt of securities, property, plant, and equipment	18,233	18,851
Increase/(decrease) in accrued purchases of property, plant, and equipment	(22,321)	8,150
(Increase)/decrease in net amounts receivable for pending investments transactions	(9,094)	6,312

N. Subsequent Events

Subsequent events were evaluated through January 28, 2022, which is the date the financial statements were issued.