

# **Stanford University**

**Stanford, California**

**Reports on Federal Awards in**

**Accordance with the Uniform Guidance**

**August 31, 2021**

**EIN: 94-1156365**

**Stanford University**  
**Stanford, California**  
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	<b>Page(s)</b>
 <b>I. Financial</b>	
Report of Independent Auditors .....	4-5
Consolidated Financial Statements .....	6-9
Notes to Consolidated Financial Statements .....	10-79
Schedule of Expenditures of Federal Awards	
Part A, Award Expenditures by Federal Program .....	80-136
Part B, Federal Loan Program Year End Balances.....	137
Notes to Schedule of Expenditures of Federal Awards .....	138
 <b>II. Internal Control and Compliance</b>	
Report of Independent Auditors on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i> .....	139-140
Report of Independent Auditors on Compliance with Requirements That Could Have a Direct and Material Effect on Each Major Program and on Internal Control Over Compliance in Accordance with the Uniform Guidance.....	141-143
 <b>III. Findings</b>	
Schedule of Findings and Questioned Costs .....	144-146
Summary Schedule of Prior Audit Findings.....	147
Management's View and Corrective Action Plan.....	148-149

## **I. Financial**



## **Report of Independent Auditors**

To The Board of Trustees of the Leland Stanford Junior University

### **Report on the Consolidated Financial Statements**

We have audited the accompanying consolidated financial statements of The Leland Stanford Junior University and its subsidiaries ("Stanford"), which comprise the consolidated statements of financial position as of August 31, 2021 and 2020, and the related consolidated statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

### ***Management's Responsibility for the Consolidated Financial Statements***

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

### ***Auditors' Responsibility***

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

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

### ***Opinion***

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of The Leland Stanford Junior University and its subsidiaries as of August 31, 2021 and 2020, and the changes in their net assets and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.



## **Other Matters**

### *Other Information*

Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The accompanying schedule of expenditures of federal awards for the year ended August 31, 2021 is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and is not a required part of the consolidated financial statements. The information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures, in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards is fairly stated, in all material respects, in relation to the consolidated financial statements taken as a whole.

### **Other Reporting Required by Government Auditing Standards**

In accordance with *Government Auditing Standards*, we have also issued our report dated December 1, 2021 on our consideration of Stanford's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters for the year ended August 31, 2021. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Stanford's internal control over financial reporting and compliance.

*PricewaterhouseCoopers LLP*  
San Francisco, CA  
December 1, 2021

**CONSOLIDATED STATEMENTS OF FINANCIAL POSITION***At August 31, 2021 and 2020 (in thousands of dollars)*

	2021	2020
<b>ASSETS</b>		
Cash and cash equivalents	\$ 1,672,789	\$ 3,142,981
Assets limited as to use	453,452	253,483
Accounts receivable, net	1,754,010	1,540,076
Prepaid expenses and other assets	510,490	479,654
Pledges receivable, net	1,700,525	1,472,466
Student loans receivable, net	42,699	46,089
Faculty and staff mortgages and other loans receivable, net	892,098	829,262
Investments at fair value	54,039,545	40,929,240
Right-of-use assets	999,513	1,104,189
Plant facilities, net of accumulated depreciation	13,078,630	13,172,620
Works of art and special collections	—	—
<b>TOTAL ASSETS</b>	<b>\$ 75,143,751</b>	<b>\$ 62,970,060</b>
<b>LIABILITIES AND NET ASSETS</b>		
<b>LIABILITIES:</b>		
Accounts payable and accrued expenses	\$ 2,789,905	\$ 3,059,141
Liabilities associated with investments	974,756	1,002,896
Lease liabilities	1,047,618	1,140,497
Deferred income and other obligations	1,988,117	1,626,449
Accrued pension and postretirement benefit obligations	629,851	719,879
Notes and bonds payable	8,302,590	8,225,671
U.S. government refundable loan funds	16,456	22,668
<b>TOTAL LIABILITIES</b>	<b>15,749,293</b>	<b>15,797,201</b>
<b>NET ASSETS:</b>		
Without donor restrictions	35,452,324	28,906,775
With donor restrictions	23,942,134	18,266,084
<b>TOTAL NET ASSETS</b>	<b>59,394,458</b>	<b>47,172,859</b>
<b>TOTAL LIABILITIES AND NET ASSETS</b>	<b>\$ 75,143,751</b>	<b>\$ 62,970,060</b>

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

## CONSOLIDATED STATEMENTS OF ACTIVITIES

For the years ended August 31, 2021 and 2020 (in thousands of dollars)

	2021	2020
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS</b>		
<b>OPERATING REVENUES:</b>		
<b>TOTAL STUDENT INCOME, NET</b>	<b>\$ 507,923</b>	<b>\$ 610,172</b>
Sponsored support:		
Direct costs - University	900,635	858,422
Direct costs - SLAC National Accelerator Laboratory	489,872	484,823
Indirect costs	297,514	278,635
<b>TOTAL SPONSORED SUPPORT</b>	<b>1,688,021</b>	<b>1,621,880</b>
<b>TOTAL HEALTH CARE SERVICES</b> , primarily net patient service revenue	<b>8,301,556</b>	<b>7,136,588</b>
<b>TOTAL CURRENT YEAR GIFTS IN SUPPORT OF OPERATIONS</b>	<b>293,715</b>	<b>295,726</b>
Net assets released from restrictions:		
Payments received on pledges	245,873	187,033
Prior year gifts released from donor restrictions	99,352	70,305
<b>TOTAL NET ASSETS RELEASED FROM RESTRICTIONS</b>	<b>345,225</b>	<b>257,338</b>
Investment income distributed for operations:		
Endowment	1,349,444	1,372,967
Expendable funds pools and other investment income	401,838	288,150
<b>TOTAL INVESTMENT INCOME DISTRIBUTED FOR OPERATIONS</b>	<b>1,751,282</b>	<b>1,661,117</b>
<b>TOTAL SPECIAL PROGRAM FEES AND OTHER INCOME</b>	<b>1,051,292</b>	<b>872,596</b>
<b>TOTAL OPERATING REVENUES</b>	<b>13,939,014</b>	<b>12,455,417</b>
<b>OPERATING EXPENSES:</b>		
Salaries and benefits	7,877,461	7,445,729
Depreciation	866,675	813,403
Other operating expenses	4,349,432	4,088,955
<b>TOTAL OPERATING EXPENSES</b>	<b>13,093,568</b>	<b>12,348,087</b>
<b>CHANGE IN NET ASSETS FROM OPERATING ACTIVITIES</b>	<b>\$ 845,446</b>	<b>\$ 107,330</b>

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

**CONSOLIDATED STATEMENTS OF ACTIVITIES, Continued***For the years ended August 31, 2021 and 2020 (in thousands of dollars)*

	2021	2020
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS (continued)</b>		
<b>CHANGE IN NET ASSETS FROM OPERATING ACTIVITIES</b>	<b>\$ 845,446</b>	<b>\$ 107,330</b>
NON-OPERATING ACTIVITIES:		
Increase in reinvested gains	5,548,668	792,130
Donor advised funds, net	3,395	61,723
Current year gifts not included in operations	408	2,026
Capital and other gifts released from restrictions	71,698	978,866
Pension and other postemployment benefit related changes other than service cost	107,179	91,792
Transfer to net assets with donor restrictions, net	(75,080)	(128,935)
Swap interest and change in value of swap agreements	53,351	(62,036)
Loss on extinguishment of debt	(2,558)	—
Other	(6,958)	(1,812)
<b>NET CHANGE IN NET ASSETS WITHOUT DONOR RESTRICTIONS</b>	<b>6,545,549</b>	<b>1,841,084</b>
<b>NET ASSETS WITH DONOR RESTRICTIONS</b>		
Gifts and pledges, net	1,104,077	739,241
Increase in reinvested gains	4,817,896	519,423
Change in value of split-interest agreements, net	122,553	16,293
Net assets released to operations	(370,724)	(282,079)
Capital and other gifts released to net assets without donor restrictions	(71,698)	(978,866)
Transfer from net assets without donor restrictions, net	75,080	128,935
Other	(1,134)	(138)
<b>NET CHANGE IN NET ASSETS WITH DONOR RESTRICTIONS</b>	<b>5,676,050</b>	<b>142,809</b>
<b>NET CHANGE IN TOTAL NET ASSETS</b>	<b>12,221,599</b>	<b>1,983,893</b>
Total net assets, beginning of year	47,172,859	45,188,966
<b>TOTAL NET ASSETS, END OF YEAR</b>	<b>\$59,394,458</b>	<b>\$47,172,859</b>

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



## CONSOLIDATED STATEMENTS OF CASH FLOWS

For the years ended August 31, 2021 and 2020 (in thousands of dollars)

	2021	2020
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>		
Change in net assets	\$ 12,221,599	\$ 1,983,893
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation	866,675	813,403
Amortization of bond premiums, discounts and other	19,569	9,814
Losses on disposal of plant facilities	—	981
Net gains on investments	(12,230,714)	(2,721,023)
Change in fair value of interest rate swaps	(78,195)	42,017
Change in split-interest agreements	158,814	43,609
Change in deferred tax asset and liability	129,127	57,219
Investment income (expense) for restricted purposes	99,098	(905)
Gifts restricted for long-term investments	(863,431)	(364,763)
Gifts of securities and properties	(30,509)	(27,432)
Other	33,740	25,950
Premiums received from bond issuance	96,831	19,885
Changes in operating assets and liabilities:		
Accounts receivable	(245,004)	(25,996)
Pledges receivable, net	(15,298)	(69,335)
Prepaid expenses and other assets	(63,056)	(107,108)
Accounts payable and accrued expenses	(98,896)	605,492
Accrued pension and postretirement benefit obligations	(90,028)	(79,434)
Lease liabilities	(38,247)	5,725
Deferred income and other obligations	259,373	131,449
<b>NET CASH PROVIDED BY OPERATING ACTIVITIES</b>	<b>131,448</b>	<b>343,441</b>
<b>CASH FLOW FROM INVESTING ACTIVITIES</b>		
Additions to plant facilities, net	(790,859)	(1,283,341)
Student, faculty and other loans:		
New loans made	(178,342)	(105,086)
Principal collected	105,835	65,511
Purchases of investments	(20,316,653)	(15,981,319)
Sales and maturities of investments	18,387,854	17,663,914
Change associated with short term investments	437,983	(684,461)
Swap settlement payments, net	(21,420)	(16,825)
<b>NET CASH USED FOR INVESTING ACTIVITIES</b>	<b>(2,375,602)</b>	<b>(341,607)</b>
<b>CASH FLOW FROM FINANCING ACTIVITIES</b>		
Gifts and reinvested income for restricted purposes	548,843	427,189
Proceeds from borrowing	1,027,471	1,429,662
Repayment of notes and bonds payable	(1,012,887)	(262,171)
Bond issuance costs and interest rate swaps	(5,412)	(6,115)
Contributions received for split-interest agreements	19,709	55,503
Payments made under split-interest agreements	(51,186)	(46,095)
Securities lending collateral sold, net	9,393	(19,468)
Other	(4,907)	(14,319)
<b>NET CASH PROVIDED BY FINANCING ACTIVITIES</b>	<b>531,024</b>	<b>1,564,186</b>
<b>INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<b>(1,713,130)</b>	<b>1,566,020</b>
Cash and cash equivalents, beginning of year	3,578,855	2,012,835
<b>CASH AND CASH EQUIVALENTS, END OF YEAR</b>	<b>\$ 1,865,725</b>	<b>\$ 3,578,855</b>
<b>SUPPLEMENTAL DATA:</b>		
Cash and cash equivalents as shown in the <i>Statements of Financial Position</i>	\$ 1,672,789	\$ 3,142,981
Restricted cash and cash equivalents included in assets limited as to use	117,179	92
Restricted cash included in other assets	28,432	44,168
Cash and restricted cash included in investments	47,325	391,614
<b>TOTAL CASH AND CASH EQUIVALENTS AS SHOWN ON THE CONSOLIDATED STATEMENTS OF CASH FLOWS</b>	<b>\$ 1,865,725</b>	<b>\$ 3,578,855</b>
Interest paid, net of capitalized interest	\$ 294,161	\$ 251,907
Change in payables for plant facilities	\$ (27,908)	\$ (170,658)
Right-of-use assets obtained in exchange for lease liabilities	\$ 66,534	\$ 447,016

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

# NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

## 1. Basis of Presentation and Significant Accounting Policies

### BASIS OF PRESENTATION

The *Consolidated Financial Statements* include the accounts of The Leland Stanford Junior University (“Stanford University” or the “University”), Stanford Health Care (SHC), Lucile Salter Packard Children’s Hospital at Stanford (LPCH) and other majority-owned or controlled entities of the University, SHC and LPCH. Collectively, all of these entities are referred to as “Stanford”. All significant inter-entity transactions and balances have been eliminated in consolidation. Certain prior year amounts have been reclassified to conform to the current year’s presentation. These reclassifications had no impact on total net assets or the change in total net assets.

### University

The University is a private, not-for-profit educational institution, founded in 1885 by Senator Leland and Mrs. Jane Stanford in memory of their son, Leland Stanford Jr. A Board of Trustees (the “Board”) governs the University. The University information presented in the *Consolidated Financial Statements* comprises all of the accounts of the University, including its institutes and research centers, and the Stanford Management Company.

SLAC National Accelerator Laboratory (SLAC) is a federally funded research and development center owned by the U.S. Department of Energy (DOE). The University manages and operates SLAC for the DOE under a management and operating contract; accordingly, the revenues and expenditures of SLAC are included in the *Consolidated Statements of Activities*, but SLAC’s DOE funded assets and liabilities are not included in the *Consolidated Statements of Financial Position*. SLAC employees are University employees and participate in the University’s employee benefit programs. The University holds some receivables from the DOE substantially related to reimbursement for employee compensation and benefits.

### Hospitals

SHC and LPCH (the “Hospitals”) are California not-for-profit public benefit corporations, each governed by a separate Board of Directors. The University is the sole member of each of these entities. SHC and LPCH support the mission of medical education and clinical research of the University’s School of Medicine (SOM). Collectively, the SOM and Hospitals comprise Stanford Medicine. SHC and LPCH operate two licensed acute care and specialty hospitals on the Stanford campus, a leading community acute care hospital, and numerous physician clinics on the campus, in community settings and in association with regional hospitals in the San Francisco Bay Area and elsewhere in California. The University has partnered with SHC and LPCH, respectively, to establish physician medical foundations to support Stanford Medicine’s mission of delivering quality care to the community and conducting research and education.

### TAX STATUS

The University, SHC and LPCH are exempt from federal and state income taxes to the extent provided by Section 501(c)(3) of the Internal Revenue Code and equivalent state provisions, except with regard to unrelated business income which is taxable at corporate income tax rates, and provisions of the 2017 Tax Cuts and Jobs Act (TCJA).

In accordance with the guidance on accounting for uncertainty in income taxes, management regularly evaluates its tax positions and does not believe the University, SHC or LPCH have any uncertain tax positions that require disclosure in or adjustment to the *Consolidated Financial Statements*. The University, SHC and LPCH are subject to routine audits by taxing jurisdictions. Management of each of the consolidated entities believes they are no longer subject to income tax examinations for fiscal years prior to August 31, 2017.

## BASIS OF ACCOUNTING

The *Consolidated Financial Statements* are prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). These principles require management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the *Consolidated Financial Statements* and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

For financial reporting purposes, net assets and revenues, expenses, gains and losses are classified into one of two categories - net assets without donor restrictions and net assets with donor restrictions based on the existence or absence of legal or donor-imposed restrictions (see *Note 10*).

Net assets without donor restrictions are expendable resources which are not subject to donor-imposed restrictions. These net assets may be designated by Stanford for specific purposes under internal operating and administrative arrangements or be subject to contractual agreements with external parties (see *Note 10*).

Net assets with donor restrictions include gifts, pledges and split-interest agreements (a) which by donor stipulation must be made available in perpetuity for investment or specific purposes, or (b) for which legal or donor imposed restrictions have not yet been met. Such restrictions include purpose restrictions where donors have specified the purpose for which the net assets are to be spent, or time restrictions imposed by donors, or appreciation and income on certain donor-restricted endowment funds that have not yet been appropriated for spending (see *Note 11*).

Contributions with donor restrictions that relate to Stanford's core activities and are received and expended or deemed expended based on the nature of donors' restrictions are classified as net assets without donor restrictions. Gifts and pledges subject to donor-imposed restrictions for specific purposes are recorded as net assets with donor restrictions and reclassified to net assets without donor restrictions upon expiration of time and purpose restrictions. Donor-restricted resources intended for capital projects are initially recorded as net assets with donor restrictions and then released and reclassified as net assets without donor restrictions when the asset is placed in service.

Transfers from net assets without donor restrictions to net assets with donor restrictions are primarily the result of donor redesignations or matching funds that are added to donor gift funds which then take on the same restrictions as the donor gift.

The operating activities of Stanford include the revenues earned and expenses incurred in the current year to support teaching, research, and health care. The non-operating activities of Stanford include increases in reinvested gains, current year gifts not included in operations, capital and other gifts released from restrictions, pension and other postemployment benefit related changes other than service cost, and certain other non-operating activities. All expenses are recorded as a reduction of net assets without donor restrictions with the exception of investment expenses that are required to be netted against investment returns.

## CASH AND CASH EQUIVALENTS

Cash and cash equivalents included in the *Consolidated Statements of Financial Position* primarily consist of U.S. Treasury bills, certificates of deposit, repurchase agreements, money market funds and all other short-term investments available for current operations with original maturities of 90 days or less at the time of purchase. These amounts are carried at amortized cost, which approximates fair value. Cash and cash equivalents that are held for investment purposes are classified as investments (see *Note 6*). The University has elected the policy to treat cash equivalents held for investment as short-term investments, and are therefore excluded from cash and cash equivalents on the *Consolidated Statements of Cash Flows*.

## ASSETS LIMITED AS TO USE

Assets limited as to use consist of deferred compensation plan assets and tax-exempt bond proceeds as described below:

### Deferred compensation plan assets

The University's custodians hold 457(b) non-qualified deferred compensation plan assets under a grantor trust which requires that they be used to satisfy plan obligations to participants and beneficiaries unless the University becomes insolvent. The funds are primarily invested in mutual funds, at the participants' discretion, which are valued based on quoted market prices (and exchange rates, if applicable) on the last trading date of the principal market on or before August 31.

**Tax-exempt bond proceeds**

The proceeds of tax-exempt bonds issued for the benefit of the University and trustee-held accounts holding proceeds of tax-exempt bonds issued for the benefit of SHC and LPCH are limited by the terms of indentures to use for qualified capital projects. The assets consist of cash and cash equivalents, recorded at cost, which approximates fair value.

**ACCOUNTS AND LOANS RECEIVABLE**

Accounts and loans receivable are carried at cost, less an allowance for doubtful accounts.

**PREPAID EXPENSES AND OTHER ASSETS**

Prepaid expenses consist of amounts paid in advance for goods or services that will be received after the end of the fiscal year including software licenses and travel programs. Other assets include cash collateral held for interest rate swaps (see *Note 7*) and restricted cash.

**PLEDGES RECEIVABLE**

Unconditional promises to give are included in the *Consolidated Financial Statements* as pledges receivable and are classified as net assets with donor restrictions. Pledges recognized on or after September 1, 2009 are recorded at an applicable risk-adjusted discount rate commensurate with the duration of the donor's payment plan. Pledges recognized in periods prior to September 1, 2009 were recorded at a discount based on the U.S. Treasury rate. Conditional promises to give are not recorded until specified obligations or barriers, such as milestones or performance targets, are met.

**INVESTMENTS**

Investments are recorded at fair value. Gains and losses (realized and unrealized) on investments are recognized in the *Consolidated Statements of Activities* (see *Note 6*).

**PLANT FACILITIES**

Plant facilities are recorded at cost or, for donated assets, at fair value at the date of donation. Interest expense for construction financing, net of income earned on unspent proceeds, is capitalized as a cost of construction. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. The useful lives used in calculating depreciation for the years ended August 31, 2021 and 2020 are as follows:

Land improvements	5-25 years
Buildings and building improvements	3-50 years
Furniture, fixtures and equipment	3-20 years
Utilities	5-40 years

**WORKS OF ART AND SPECIAL COLLECTIONS**

Works of art, historical treasures, literary works and artifacts, which are preserved and protected for educational, research and public exhibition purposes, are not capitalized. Donations of such collections are not recorded for financial statement purposes. Purchases of collection items are recorded as operating expenses in the period in which they are acquired. Proceeds from sales of such items are used to acquire other items for the collections.

**DONATED ASSETS**

Donated assets, other than works of art and special collections, are recorded at fair value at the date of donation. Undeveloped land, including land acquired under the original endowment to the University from Senator Leland and Mrs. Jane Stanford, is reported at fair value as of the date of acquisition. Under the terms of the original founding grant, a significant portion of University land may not be sold.

## DONOR ADVISED FUNDS

The University receives gifts from donors under donor advised fund (DAF) agreements. These funds are owned and controlled by the University and are separately identified by donor. A significant portion of the gift must be designated to the University. At August 31, 2021 and 2020, approximately \$772.0 million and \$574.3 million, respectively, of DAFs may be used to support other approved charities; the donors have advisory privileges with respect to the distribution of these funds.

Current year gifts under the DAF agreements are included in the *Consolidated Statements of Activities* as “donor advised funds, net” at the full amount of the gift. Transfers of funds to other charitable organizations are included in the *Consolidated Statements of Activities* as a reduction to “donor advised funds, net” at the time the transfer is made.

## SPLIT-INTEREST AGREEMENTS

Split-interest agreements consist of arrangements with donors where Stanford has an interest in the assets and receives benefits that are shared with other beneficiaries. Stanford’s split-interest agreements with donors, for which Stanford serves as trustee, consist primarily of irrevocable charitable remainder trusts, charitable gift annuities, pooled income funds, perpetual trusts and charitable lead trusts. Assets are invested and payments are made to donors or other beneficiaries in accordance with the respective agreements. Contribution revenues are recognized at the date the agreements are established. The fair value of the estimated future payments to beneficiaries under these agreements is recorded as a liability.

The assets held under split-interest agreements, where the University is the trustee, were \$1.1 billion and \$909.6 million at August 31, 2021 and 2020, respectively, and were recorded in specific investment categories. The assets held under split-interest agreements, where LPCH is the trustee, were \$13.1 million and \$11.3 million at August 31, 2021 and 2020, respectively, and were recorded in specific investment categories. Liabilities for the discounted present value of any income beneficiary interest are reported in “liabilities associated with investments” in the *Consolidated Statements of Financial Position*. At August 31, 2021 and 2020, the University used discount rates of 1.2% and 0.4%, respectively, based on the Charitable Federal Midterm Rate. The LPCH discount rate used during the years ended August 31, 2021 and 2020 was 1.2% and 0.7%, respectively, determined using the T-bill rate.

Included in assets held under split-interest agreements are amounts held to meet legally mandated annuity reserves of \$29.8 million and \$32.9 million as of August 31, 2021 and 2020 respectively, as required by California state law.

For irrevocable split-interest agreements whose assets are held in trusts not administered by the University, Stanford recognizes the estimated fair value of its beneficial interest in the trust assets and the associated gift revenue when reported to Stanford. These split-interest agreements are recorded in the “assets held by other trustees” category of “investments” in the *Consolidated Statements of Financial Position* as described in Note 6.

During fiscal years 2021 and 2020, the discounted present value of new University gifts subject to split-interest agreements, net of any income beneficiary share, was \$8.0 million and \$12.9 million, respectively, and was included in net assets with donor restrictions as “gifts and pledges, net” in the *Consolidated Statements of Activities*. Actuarial gains or losses were included in “change in value of split-interest agreements, net” in the *Consolidated Statements of Activities*.

## DEFERRED INCOME AND OTHER OBLIGATIONS

Deferred income and other obligations consist of advance payments of student tuition, student room and board, sponsored support, and support of other operating programs. Revenue is recognized as it is earned or as the associated conditions are satisfied. In addition, the University records other deferred income and obligations as described below.

### Deferred Rental Income

As part of its investment portfolio, the University holds certain investment properties that it leases to third parties under non-cancellable leases. In some lease transactions with properties in the Stanford Research Park and other properties, including the Stanford Shopping Center, prepaid rent is received, recorded as deferred rental income and amortized over the term of the lease (see also the *Future Minimum Rental Income* section in Note 6). As of August 31, 2021 and 2020, deferred rental income was \$912.8 million and \$797.4 million, respectively.

**457(b) Deferred Compensation Plan**

The University offers a non-qualified deferred compensation plan under Internal Revenue Code 457(b) to a select group of highly compensated employees. There is no University contribution related to the plan. The University has recorded both an asset and a liability related to the plan of \$336.3 million and \$253.4 million as of August 31, 2021 and 2020, respectively; the assets are included in “assets limited as to use” in the *Consolidated Statements of Financial Position*.

**Repurchase Obligations**

In an effort to provide affordable housing, certain residential units are offered to eligible faculty and staff under long-term restricted ground leases. These units are located on or in close proximity to Stanford’s campus. The cost of the units that are constructed or purchased by the University is included in “plant facilities, net of accumulated depreciation” in the *Consolidated Statements of Financial Position*.

The University has the obligation to repurchase certain residential units when specified triggering events occur. As of August 31, 2021 and 2020, Stanford has recognized a net repurchase obligation of \$121.0 million and \$101.6 million, respectively, to repurchase its interests in these residential units, net of home mortgage financing assistance provided by the University of \$204.1 million and \$190.7 million, respectively (see *Note 5*). The change in the repurchase obligation and the original purchase price is recorded as interest accretion and is reflected in “other operating expenses” in the *Consolidated Statements of Activities*. For the years ended August 31, 2021 and 2020, interest accretion was \$9.4 million and \$8.7 million, respectively.

**Asset Retirement Obligations**

Asset retirement obligations are legal obligations associated with the retirement of long-lived assets. These liabilities are initially recorded at fair value and the related asset retirement costs are capitalized at the same amount as the liability. Asset retirement costs are subsequently amortized over the useful lives of the related assets and the obligations are increased based on an appropriate discount rate. As of August 31, 2021 and 2020, SHC had asset retirement obligations of \$107.7 million and \$104.1 million, respectively.

**SELF-INSURANCE**

The University self-insures at varying levels for unemployment, disability, workers’ compensation, property losses, certain health care plans and general and professional liability losses. SHC and LPCH self-insure at varying levels for health care plans, workers’ compensation and, through their captive insurance company, for professional liability losses. In some cases, third-party insurance is purchased to cover liabilities in excess of self-insured retentions. Estimates of retained self-insured losses are reserved and accrued.

**INTEREST RATE EXCHANGE AGREEMENTS**

The University and SHC have entered into several interest rate exchange agreements to reduce the effect of interest rate fluctuation on their variable rate revenue bonds and notes. Current accounting guidance for derivatives and hedges requires entities to recognize all derivative instruments at fair value. The University and SHC do not designate and qualify their derivatives for hedge accounting; accordingly, any changes in the fair value (i.e. gains or losses) flow directly to the *Consolidated Statements of Activities* as a non-operating activity in “swap interest and change in value of swap agreements.” The settlements (net cash payments less receipts) under the interest rate exchange agreements are also recorded in the *Consolidated Statements of Activities* in “swap interest and change in value of swap agreements.”

The University has also entered into interest rate exchange agreements to reduce the effect of interest rate fluctuations of certain investment positions (see *Note 7*).

**REVENUE****Student income and financial aid**

"Student income, net" reported in the *Consolidated Statements of Activities* consists of tuition, room and board, and other student fees from undergraduate and graduate students which are recognized as revenue ratably during the fiscal year in which the academic services are rendered. The University also provides financial aid in the form of scholarship and fellowship grants that cover a portion of tuition, room and board, and other student fees; this financial assistance is reflected as a reduction of student income. Student payments are due at the beginning of each academic term. Payments received for future academic terms are recorded as deferred income and totaled \$8.3 million and \$7.5 million for the years ended August 31, 2021 and 2020, respectively. These payments are recognized in the subsequent fiscal year. The following table presents student income, net of financial aid, for the years ended August 31, in thousands of dollars:

	2021	2020
Student income:		
Undergraduate programs	\$ 337,103	\$ 383,870
Graduate programs	378,240	391,480
Room and board	132,521	164,874
Student financial aid	(339,941)	(330,052)
<b>TOTAL STUDENT INCOME, NET</b>	<b>\$ 507,923</b>	<b>\$ 610,172</b>

In addition to student financial aid, the University also provided other graduate support in the form of stipends, teaching and research assistantships, and related allowances for tuition. These amounts are reflected in operating expenses.

**Sponsored Support**

The University conducts substantial research pursuant to contracts and grants from the federal government, state and local governments, private corporations, foundations and others. Sponsored support earned from the federal government (including SLAC) is the largest segment of sponsored support. For both years ended August 31, 2021 and 2020, federal sponsored support was \$1.3 billion. The Office of Naval Research is the University's cognizant federal agency for determining indirect cost rates charged to federally sponsored agreements. It is supported by the Defense Contract Audit Agency, which has the responsibility for auditing direct and indirect charges under those agreements.

The majority of sponsored support is contribution revenue and is recognized when any sponsor-imposed conditions have been met, typically when qualifying expenditures are incurred. Sponsored contribution revenue for the years ended August 31, 2021 and 2020 was \$1.1 billion and \$1.0 billion, respectively.

Other sponsored arrangements are considered exchange transactions and revenue is recognized in accordance with the terms of each contract or grant which are primarily based on costs incurred, completion of milestones, or other obligations as specified in the contracts. For the years ended August 31, 2021 and 2020, the University recognized \$123.8 million and \$122.5 million in revenue from exchange contracts, respectively.

SLAC is managed and operated by the University for the DOE under a management and operating contract, which is considered to be an exchange transaction. The University operates SLAC and the DOE is obligated to pay for allowable operating costs. The University recognizes revenue from the DOE as costs are incurred in the management and operation of SLAC per the terms of the contract. Revenue of \$489.9 million and \$484.8 million was recognized for the years ended August 31, 2021 and 2020, respectively.

Deferred income of \$180.4 million and \$179.8 million was recorded at August 31, 2021 and 2020, respectively, for payments received from sponsors that have not been earned. During the years ended August 31, 2021 and 2020, \$121.0 million and \$107.8 million of revenue was recognized that was included in the prior year deferred income balance, respectively. In addition, as of both August 31, 2021 and 2020, the University had been awarded \$1.1 billion in sponsored support for which the conditions to recognize revenue have not been met. These are conditional contributions and are not recorded in the *Consolidated Financial Statements*.



### Health Care Services

"Total health care services" is reported in the *Consolidated Statements of Activities* at the estimated net realizable amounts from patients, third-party payers, and others for services rendered (collectively, "patient care revenue"). Estimated net realizable amounts represent amounts due, net of price concessions. Price concessions are based on management's assessment of expected net collections considering economic conditions, historical experience, trends in health care coverage and other collection indicators. SHC and LPCH derive a majority of patient care revenues from contractual agreements with Medicare, Medi-Cal and other third-party payers. Payments under these agreements and programs are based on a variety of payment models (see *Note 12*). Health care revenue is recognized as services are rendered either at a point in time or, for inpatient acute care services, over time generally from admission to discharge. Generally, patients and third-party payers are billed several days after services are performed or shortly after discharge. All health care revenue relates to contracts with customers with a duration of less than one year.

The University has entered into various operating agreements with SHC and LPCH for the professional services of School of Medicine faculty members, and for non-physician services such as telecommunications, facilities, and other services. The payments by the Hospitals to the University for professional services are eliminated in consolidation.

SHC and LPCH provide care to patients who meet certain criteria under their charity care policies without charge or at amounts less than their established rates. The Hospitals do not record revenue for amounts determined to qualify as charity care (see *Note 12*).

### Gifts

Gifts are contributions primarily received from donors such as alumni and other private individuals, trusts, and foundations. Gifts may be designated by donors for specific purposes; accordingly, they are recognized in the period received in the appropriate net asset category based on the presence or absence of donor restrictions on their use. Contributions designated for the acquisition of plant facilities and long-term investments are initially reported in net assets with donor restrictions.

Gifts are considered conditional if the terms of the agreement include both a requirement for Stanford to meet certain specified obligations, or barriers, such as milestones or performance targets, and a refund of amounts paid (or a release from obligation to make future payments). Conditional gifts are not recorded until the obligations or barriers are met.

### Special Program Fees and Other Income

Special program fees and other income consists of several exchange contracts including instruction fees for professional education programs, membership affiliation fees, rental income, travel and camp programs, distributions from the Pac-12 Conference, Stanford Blood Center fees, and various other types of income. Depending on the program, revenue is recognized at a point in time or over time as obligations are met. For the years ended August 31, 2021 and 2020, other income includes \$399.5 million and \$201.8 million of CARES Act provider relief funding, respectively. Provider relief funding was recognized based on information contained in laws and regulations, as well as interpretations issued by the Department of Health and Human Services (see *Note 19*).

### RECENT ACCOUNTING PRONOUNCEMENTS

Periodically, the Financial Accounting Standards Board (FASB) issues updates to the Accounting Standards Codification (ASC) which impact Stanford's financial reporting and related disclosures. The following paragraphs summarize relevant updates. Unless otherwise noted, Stanford is currently evaluating the impact that these updates will have on the *Consolidated Financial Statements*.

#### Contributed nonfinancial assets

Accounting Standards Update (ASU) 2020-07, FASB Issue Date: September 2020, Effective Date: Fiscal Year 2022

The ASU provides enhanced presentation and disclosure requirements for contributed nonfinancial assets for not-for-profit entities including additional disclosure requirements for recognized contributed services. Contributed nonfinancial assets should be presented in a separate line item in the *Statement of Activities* apart from cash contributions. Additional disclosures are required about qualitative information, policy (if any) on monetizing rather than utilizing, donor-imposed restrictions and fair value measurement of contributed nonfinancial assets.



**Reference rate reform**

ASU 2020-04, FASB Issue Date: March 2020, Effective Date: All contracts as of March 12, 2020 through December 31, 2022

The ASU provides optional expedients for applying GAAP to contracts and other transactions that reference LIBOR or other reference rates that are expected to be discontinued because of reference rate reform. The amendments also permits an entity to consider contract modifications due to reference rate reform to be an event that does not require contract remeasurement. For the year ended August 31, 2021 there is no impact to the University due to reference rate reform since impacted contracts will not transition to other benchmark rates until LIBOR sunsets in 2023.

**Intangibles - goodwill and other**

ASU 2019-06, FASB Issue Date: May 2019, Effective Date: Fiscal Year 2021

The ASU allows Not-for-Profit Entities to amortize goodwill on a straight line basis over 10 years or less than 10 years if appropriate and option to test impairment. The new guidance has been adopted in fiscal year 2021 and did not have an impact on the *Consolidated Financial Statements*.

**Works of art and special collections**

ASU 2019-03, FASB Issue Date: March 2019, Effective Date: Fiscal Year 2021

The ASU modifies the definition of the term "collections" so that they are subject to an organizational policy that stipulates the use of proceeds from collection items that are sold to be for the acquisition of new collection items, the direct care of existing collections, or both. The new guidance has been adopted in fiscal year 2021 and did not have an impact on the *Consolidated Financial Statements*.

**Cloud computing arrangements**

ASU 2018-15, FASB Issue Date: In August 2018, Effective Date: Fiscal Year 2022

The ASU requires capitalization of implementation costs incurred in a cloud computing arrangement in a manner that is consistent with the capitalization of implementation costs incurred to develop or obtain internal-use software.

**Defined benefit plan disclosures**

ASU 2018-14, FASB Issue Date: August 2018, Effective Date: Fiscal Year 2022

The ASU adds, removes, and clarifies disclosure requirements related to defined benefit pension and other postretirement plans.

**Fair value**

ASU 2018-13, FASB Issue Date: August 2018, Effective Date: Fiscal Year 2021

The ASU adds, modifies, and removes certain fair value measurement disclosure requirements. The portion of this guidance that modified and removed fair value disclosure requirements was early adopted in fiscal year 2019. The remaining guidance was adopted in fiscal year 2021 (see *Note 6*).

## 2. Financial Assets and Liquid Resources

### OVERVIEW

Stanford closely monitors its liquidity requirements and structures its financial assets to meet its short- and long-term needs and contractual commitments. To meet these needs, Stanford holds investments in various pools or in specific assets with varying degrees of liquidity, as well as having an authorized short-term commercial paper program. Stanford also has access to additional short-term financing facilities such as revolving lines of credit that can be available for unexpected liquidity needs (see *Note 9*).

### OPERATIONS

The University, SHC and LPCH each manage their own operating cash through short-term investment pools. The primary investment objective for these funds is to preserve the principal value of the portfolio while meeting the liquidity needs of each of the entities. Cash flows vary seasonably during the year due to a variety of factors including timing of donor contributions, the University's academic calendar and the Hospitals' patient admission cycles. For working capital purposes, cash is managed by matching the timing of inflows and outflows as closely as possible, combined with active use of cash forecasting models to manage investment timing. Operating liquidity is tracked daily and reported weekly to provide management visibility. As noted above, back up borrowing facilities are also available to meet working capital needs.

### MERGED POOL

The Merged Pool (MP) is the primary investment pool for endowment and other long-term funds for the University and the Hospitals. Approximately 14% of the MP consists of liquid investments, with the balance representing investments which are generally subject to constraints which either limit Stanford's ability to withdraw such capital or limit the amounts available for withdrawal at given redemption dates. The MP further maintains sufficient liquidity to distribute the monthly endowment payout in support of University operating expenditures, and to meet unfunded commitments associated with certain alternative investments. It is not the intention of the University to utilize its financial assets without donor restrictions-including board designated endowment funds-that are invested for the long-term for unplanned operating commitments; however, amounts could be made available from these sources if necessary, except for those underlying investments with lock-up provisions (see *Note 6*).

Financial assets and liquid resources available within one year of the balance sheet date at August 31, 2021 and 2020 in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
Financial assets:				
Cash and cash equivalents	\$ 874,943	\$ 407,044	\$ 390,802	\$ 1,672,789
Assets limited as to use	117,179	—	—	117,179
Accounts receivable, net	218,351	764,948	617,783	1,601,082
Pledges receivable available for operations	135,427	—	12,564	147,991
Investments available for current use	962,602	2,222,890	788,068	3,973,560
Endowment payout in support of operations	1,428,000	—	—	1,428,000
Financial assets available to meet cash needs for general expenditure within one year	3,736,502	3,394,882	1,809,217	8,940,601
Liquid resources available for use:				
Taxable commercial paper	500,000	—	—	500,000
Tax-exempt commercial paper	300,000	—	—	300,000
Revolving credit facilities	425,000	100,000	200,000	725,000
<b>TOTAL FINANCIAL ASSETS AND LIQUID RESOURCES AVAILABLE WITHIN ONE YEAR</b>	<b>\$ 4,961,502</b>	<b>\$ 3,494,882</b>	<b>\$ 2,009,217</b>	<b>\$ 10,465,601</b>
<b>2020</b>				
Financial assets:				
Cash and cash equivalents	\$ 1,153,303	\$ 1,642,912	\$ 346,766	\$ 3,142,981
Accounts receivable, net	219,349	654,342	513,297	1,386,988
Pledges receivable available for operations	108,345	—	10,733	119,078
Investments available for current use	852,839	709,260	610,407	2,172,506
Endowment payout in support of operations	1,270,000	—	—	1,270,000
Financial assets available to meet cash needs for general expenditure within one year	3,603,836	3,006,514	1,481,203	8,091,553
Liquid resources available for use:				
Taxable commercial paper	500,000	—	—	500,000
Tax-exempt commercial paper	250,000	—	—	250,000
Revolving credit facilities	389,700	200,000	170,000	759,700
<b>TOTAL FINANCIAL ASSETS AND LIQUID RESOURCES AVAILABLE WITHIN ONE YEAR</b>	<b>\$ 4,743,536</b>	<b>\$ 3,206,514</b>	<b>\$ 1,651,203</b>	<b>\$ 9,601,253</b>

### 3. Accounts Receivable

Accounts receivable, net of allowances for doubtful accounts, at August 31, 2021 and 2020, in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
U.S. government sponsors	\$ 116,338	\$ 17,955	\$ —	\$ 134,293
Non-federal sponsors and programs	60,218	18,951	26,361	105,530
Accrued interest on investments	22,695	—	—	22,695
Student	9,466	—	—	9,466
Patient and third-party payers	—	764,948	579,760	1,344,708
Other	36,199	92,667	11,662	140,528
	244,916	894,521	617,783	1,757,220
Less allowance for doubtful accounts	(3,210)	—	—	(3,210)
<b>ACCOUNTS RECEIVABLE, NET</b>	<b>\$ 241,706</b>	<b>\$ 894,521</b>	<b>\$ 617,783</b>	<b>\$ 1,754,010</b>
<b>2020</b>				
U.S. government sponsors	\$ 111,300	\$ —	\$ —	\$ 111,300
Non-federal sponsors and programs	65,184	18,803	23,265	107,252
Accrued interest on investments	13,564	—	—	13,564
Student	5,355	—	—	5,355
Patient and third-party payers	—	654,342	467,612	1,121,954
Other	40,910	119,990	22,420	183,320
	236,313	793,135	513,297	1,542,745
Less allowance for doubtful accounts	(2,669)	—	—	(2,669)
<b>ACCOUNTS RECEIVABLE, NET</b>	<b>\$ 233,644</b>	<b>\$ 793,135</b>	<b>\$ 513,297</b>	<b>\$ 1,540,076</b>

#### 4. Pledges Receivable

Pledges are recorded at discounted rates ranging from 0.6% to 5.7%. At August 31, 2021 and 2020, pledges receivable, net of discounts and allowances, in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>2021</b>					
One year or less	\$ 281,562	\$ 29,398	\$ 79,879	\$ (19,030)	\$ 371,809
Between one year and five years	1,121,211	19,755	58,269	(27,688)	1,171,547
More than five years	272,670	4,000	25,237	(5,027)	296,880
	1,675,443	53,153	163,385	(51,745)	1,840,236
Less discounts and allowances	(125,129)	(4,293)	(10,289)	—	(139,711)
<b>PLEDGES RECEIVABLE, NET</b>	<b>\$ 1,550,314</b>	<b>\$ 48,860</b>	<b>\$ 153,096</b>	<b>\$ (51,745)</b>	<b>\$ 1,700,525</b>
<b>2020</b>					
One year or less	\$ 286,750	\$ 29,932	\$ 40,841	\$ (14,227)	\$ 343,296
Between one year and five years	879,389	18,116	55,139	(29,316)	923,328
More than five years	338,056	4,687	25,658	(10,250)	358,151
	1,504,195	52,735	121,638	(53,793)	1,624,775
Less discounts and allowances	(134,778)	(5,339)	(12,192)	—	(152,309)
<b>PLEDGES RECEIVABLE, NET</b>	<b>\$ 1,369,417</b>	<b>\$ 47,396</b>	<b>\$ 109,446</b>	<b>\$ (53,793)</b>	<b>\$ 1,472,466</b>

## 5. Loans Receivable

Loans receivable consist primarily of University student loans receivable and faculty and staff mortgages. University management regularly assesses the adequacy of the allowance for credit losses of its loans by performing ongoing evaluations considering the differing economic risks associated with each loan category, the financial condition of specific borrowers, the economic environment in which the borrowers operate, the level of delinquent loans and the value of any collateral.

### STUDENT LOANS RECEIVABLE

Student loans receivable consist of institutional and federally-sponsored loans due from both current and former students. Student loans and allowance for student loan losses at August 31, 2021 and 2020, in thousands of dollars, are as follows:

	2021	2020
Institutional loans	\$ 29,593	\$ 28,975
Federally-sponsored loans	13,804	18,065
	43,397	47,040
Less allowance for student loan losses	(698)	(951)
<b>STUDENT LOANS RECEIVABLE, NET</b>	<b>\$ 42,699</b>	<b>\$ 46,089</b>

Institutional loans are funded by donor funds restricted for student loan purposes and University funds made available to meet demand for student loan borrowing in specific situations.

Federally-sponsored loans are funded by advances to the University primarily under the Federal Perkins Loan Program (the "Program"). During the years ended August 31, 2021 and 2020, the University returned \$6.2 million and \$16.4 million of Program funds to the U.S. Department of Education, respectively. Loans to students under the Program are subject to mandatory interest rates and significant restrictions and can be assigned to the federal government in certain non-repayment situations. In these situations, the federal portion of the loan balance is guaranteed.

Amounts received under the Program are ultimately refundable to the federal government in the event the University no longer participates in the Program, and accordingly, have been reported as an obligation in the *Consolidated Statements of Financial Position* as "U.S. government refundable loan funds." The Program expired in September 2017 and the University is no longer issuing new loans under the Program.

### FACULTY AND STAFF MORTGAGES

In a program to attract and retain excellent faculty and senior staff, the University provides home mortgage financing assistance, primarily in the form of subordinated loans. The loans and mortgages are collateralized by deeds of trust on properties concentrated in the region surrounding the University. Notes receivable amounting to \$877.4 million and \$812.8 million at August 31, 2021 and 2020, respectively, from University faculty and staff are included in "faculty and staff mortgages and other loans receivable, net" in the *Consolidated Statements of Financial Position*. Management has determined that no allowance is necessary.

The August 31, 2021 and 2020 amounts are net of \$204.1 million and \$190.7 million, respectively, offset against the University's recorded obligation to repurchase certain residential units sold under long-term restricted ground leases. See the *Repurchase Obligations* section of Note 1.

## 6. Investments

Investments are measured and recorded at fair value. The valuation methodology, investment categories, fair value hierarchy, certain investment activities and related commitments for fiscal years 2021 and 2020 are presented below. Investments held by Stanford at August 31, 2021 and 2020, in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>2021</b>					
Investment assets:					
Cash and short-term investments	\$ 717,827	\$ 67,096	\$ 3,215	\$ —	\$ 788,138
Collateral held for securities loaned	9,847	—	—	—	9,847
Public equities	11,361,826	1,211,571	67,336	—	12,640,733
Derivatives	(5,464)	—	—	—	(5,464)
Fixed income	4,222,821	841,098	99,464	—	5,163,383
Real estate	9,101,686	—	10,270	—	9,111,956
Natural resources	1,685,968	—	6,543	—	1,692,511
Private equities	16,913,363	—	43,086	—	16,956,449
Absolute return	6,758,761	—	26,232	—	6,784,993
Assets held by other trustees	149,531	—	19,650	—	169,181
Other	706,970	20,848	—	—	727,818
Total	51,623,136	2,140,613	275,796	—	54,039,545
Hospitals' funds invested in the University's investment pools	(3,622,055)	2,522,127	1,092,536	7,392	—
<b>INVESTMENTS AT FAIR VALUE</b>	<b>\$ 48,001,081</b>	<b>\$ 4,662,740</b>	<b>\$ 1,368,332</b>	<b>\$ 7,392</b>	<b>\$ 54,039,545</b>
Investment liabilities:					
Income beneficiary share of split interest agreements <sup>1</sup>	\$ 728,530	\$ —	\$ —	\$ —	\$ 728,530
Net investment income excise tax	233,057	—	—	—	233,057
Securities lending <sup>2</sup>	9,847	—	—	—	9,847
Accrued management fees	3,322	—	—	—	3,322
<b>LIABILITIES ASSOCIATED WITH INVESTMENTS</b>	<b>\$ 974,756</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ 974,756</b>

<sup>1</sup> See split-interest agreements section in Note 1

<sup>2</sup> Investments at fair value include \$9.4 million of securities pledged or on loan.

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
2020					
Investment assets:					
Cash and short-term investments	\$ 1,957,811	\$ 62,164	\$ 2,913	\$ —	\$ 2,022,888
Collateral held for securities loaned	454	—	—	—	454
Public equities	8,238,932	417,645	54,810	—	8,711,387
Derivatives	(63,415)	—	—	—	(63,415)
Fixed income	2,427,103	207,265	97,433	—	2,731,801
Real estate	8,559,129	—	7,899	—	8,567,028
Natural resources	1,345,084	—	7,184	—	1,352,268
Private equities	10,811,362	—	26,389	—	10,837,751
Absolute return	5,719,253	—	21,967	—	5,741,220
Assets held by other trustees	126,349	—	16,889	—	143,238
Other	874,321	8,454	1,845	—	884,620
Total	39,996,383	695,528	237,329	—	40,929,240
Hospitals' funds invested in the University's investment pools	(2,421,800)	1,604,319	810,090	7,391	—
<b>INVESTMENTS AT FAIR VALUE</b>	<b>\$37,574,583</b>	<b>\$ 2,299,847</b>	<b>\$ 1,047,419</b>	<b>\$ 7,391</b>	<b>\$ 40,929,240</b>
Investment liabilities:					
Income beneficiary share of split interest agreements <sup>1</sup>	\$ 610,409	\$ —	\$ —	\$ —	\$ 610,409
Net investment income excise tax	84,592	—	—	—	84,592
Securities lending <sup>2</sup>	454	—	—	—	454
Securities sold, not yet purchased	277,949	—	—	—	277,949
Accrued management fees	29,492	—	—	—	29,492
<b>LIABILITIES ASSOCIATED WITH INVESTMENTS</b>	<b>\$ 1,002,896</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ 1,002,896</b>

<sup>1</sup> See split-interest agreements section in Note 1

<sup>2</sup> Investments at fair value include \$445 thousand of securities pledged or on loan.

## VALUATION METHODOLOGY

To the extent available, Stanford's investments are recorded at fair value based on quoted prices in active markets on a trade-date basis. Stanford's investments that are listed on any U.S. or non-U.S. recognized exchanges are valued based on readily available market quotations. When such inputs do not exist, fair value measurements are based on the best available information and usually require a degree of judgment. For alternative investments, which are principally interests in limited partnerships or similar investments in private equity, real estate, natural resources, public equities and absolute return funds, the value is primarily based on the Net Asset Value (NAV) of the underlying investments. The NAV is reported by external investment managers in accordance with their policies as described in their respective financial statements and offering memoranda. The most recent NAV reported is adjusted for any investment-related transactions such as capital calls or distributions and significant known valuation changes of its related portfolio through August 31, 2021 and 2020, respectively. These investments are generally less liquid than other investments, and the value reported may differ from the values that would have been reported had a ready market for these investments existed.

The University exercises due diligence in assessing the policies, procedures, and controls implemented by its external investment managers and believes its proportionate share of the carrying amount of these alternative investments is a reasonable estimate of fair value. Such due diligence procedures include, but are not limited to, ongoing communication, on-site visits, and review of information from external investment managers as well as review of performance. In conjunction with these procedures, estimated fair value is determined by consideration of a range of factors, such as market conditions, redemption terms and restrictions, and risks inherent in the inputs of the external investment managers' valuations.

For certain alternative investments which are direct investments, Stanford considers various factors to estimate fair value, such as, but not limited to, the timing of the transaction, the market in which the company operates, comparable transactions, company performance and projections, as well as discounted cash flow analysis. The selection of an appropriate valuation technique may be affected by the availability and general reliability of relevant inputs. In some cases, one valuation technique may provide the best



indication of fair value while in other circumstances, multiple valuation techniques may be appropriate. Furthermore, Stanford may review the investment's underlying portfolio as well as engage external appraisers, depending on the circumstances and the nature of the investment.

The investment portfolio may be exposed to various risks, including, but not limited to, interest rate, market, sovereign, geographic, counterparty, liquidity and credit risk. Stanford management regularly assesses these risks through established policies and procedures. Fair value reporting requires management to make estimates and assumptions about the effects of matters that are inherently uncertain. Actual results could differ from these estimates and such differences could have a material impact on the *Consolidated Financial Statements*.

## INVESTMENT CATEGORIES

Investments are categorized by asset class and valued as described below:

**Cash and short-term investments** include cash, cash equivalents, mutual funds, and fixed income investments with original maturities of less than one year (see also *Note 1*). Cash equivalents such as money market funds and overnight repurchase agreements are carried at cost. Fixed income investments such as short-term U.S. Treasury bills are carried at amortized cost. Due to the short-term nature and liquidity of these financial instruments, the carrying values of these assets approximates fair value. Cash may include collateral provided to or received from counterparties associated with investment-related derivative contracts (see *Note 7*).

**Collateral held for securities loaned** is generally received in the form of cash and cash equivalents and is reinvested for income in cash equivalent vehicles. These investments are recorded at fair value.

**Public equities** are investments valued based on quoted market prices (and exchange rates, if applicable) on the last trading date of the principal market on or before August 31. They include investments that are directly held as well as commingled funds which invest in publicly traded equities. The fair values of public equities held through alternative investments are reported by the respective external investment managers using NAV, as a practical expedient, as described in the *Valuation Methodology* section above.

**Derivatives** are used by Stanford to manage its exposure to certain risks relating to ongoing business and investment operations. Derivatives may include swaps and forward currency contracts which are reflected at fair value by using quantitative models that utilize multiple market inputs. The market inputs are actively quoted and can be validated through external sources, including market transactions, brokers and third party pricing sources.

**Fixed income** investments are valued by independent pricing sources, broker dealers or pricing models that factor in, where applicable, recently executed transactions, interest rates, bond or credit default spreads and volatility. They primarily include investments that are actively traded fixed income securities or mutual funds.

**Real estate** represents directly owned real estate, mutual funds, interests in long-term ground leases and other real estate interests held through limited partnerships. A significant portion of the fair value of real estate directly owned by Stanford and subject to long-term ground leases, including the Stanford Shopping Center and the Stanford Research Park, is based on independent appraisals that use discounted cash flows and market data, if available. The fair value of alternative investments in real estate held through limited partnerships is based on the NAV reported by the external investment managers and is adjusted as described in the *Valuation Methodology* section above. The fair value of real estate held through commingled and mutual funds are based on quoted market prices.

**Natural resources** represent commodity and energy related investments held through both public and non-public investments. Public securities are valued based on quoted market prices (and exchange rates, if applicable) on the last trading day of the principal market on or before August 31. The fair value of direct non-public investments are based on a combination of models, including appraisals, discounted cash flows and commodity price factors. The fair value of natural resources held as alternative investments is based on the NAV reported by the external investment managers and is adjusted as described in the *Valuation Methodology* section above.

**Private equities** are investments primarily in venture capital and leveraged buyout strategies. Distributions from these investments are received in the form of either cash or distributed shares, which are typically valued using quoted market prices. The fair value of

alternative investments is based on the NAV reported by the external investment managers and is adjusted as described in the *Valuation Methodology* section above.

**Absolute return** investments are typically commingled funds that employ multiple strategies to produce positive returns which may be uncorrelated to financial market activities. The fair value of these types of alternative investments is valued based on the NAV reported by the external investment managers and is adjusted as described in the *Valuation Methodology* section above.

**Assets held by other trustees** generally represent Stanford's residual (or beneficial) interest in split-interest agreements where the University, SHC or LPCH is not the trustee. The residual interest represents the present value of the future distributions expected to be received over the term of the agreement, which approximates fair value, and the assets are based on estimates provided by trustees.

**Other** investments are typically non-public investments such as preferred stocks, convertible notes and mineral rights. The fair value of these types of direct investments is determined as described in the *Valuation Methodology* section above.

## LIABILITIES ASSOCIATED WITH INVESTMENTS

**Income beneficiary share of split interest agreements** - See the *Split-Interest Agreements* section of Note 1.

**Net investment income excise tax** - The TCJA was signed into law on December 22, 2017. Under the TCJA, the University is subject to a 1.4% excise tax on its net investment income as defined under the Internal Revenue Code which, among other things, includes net investment income of certain related entities such as the Hospitals. The University has recorded current and deferred tax liabilities based on reasonable estimates.

**Securities lending** - The University has a collateralized borrowing program in which it receives short-term U.S. government obligations or cash and cash equivalents in exchange for transferring securities as collateral to the counterparty and recognizes an obligation to reacquire the securities for cash at the transaction's maturity. It is the University's policy to require receipt of collateral equal to a minimum of 102% of the fair market value of these collateralized borrowings. In the event the counterparty was to default on its obligations, The University has the right to repurchase the securities in the open market using the collateral received.

Under the securities lending agreement, securities loaned are primarily public equities, corporate bonds or U.S. Treasury bills and the agreement continues until the security is delivered back to the University. The estimated fair value of securities loaned at August 31, 2021 and 2020 was \$9.4 million and \$445 thousand, respectively. The University received on loan publicly traded equities of \$9.8 million and \$454 thousand at August 31, 2021 and 2020, respectively.

**Securities sold, not yet purchased** are obligations to acquire and deliver to the lenders the publicly traded securities identical to the ones borrowed. A realized gain or loss is recognized for the difference between the proceeds and the cost of such securities at that time.

**Accrued management fees** are obligations related to management and performance fees due quarterly or annually to external investment managers in accordance with agreed-upon terms.

**Pending trades of securities** are obligations arising from trades of securities purchased but not settled. These are usually settled three business days after the trade date.

## FAIR VALUE HIERARCHY

U.S. GAAP defines fair value as the price received upon sale of an asset or paid upon transfer of a liability in an orderly transaction between market participants. Current guidance establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Inputs are used in applying the various valuation techniques and take into account the assumptions that market participants use to make valuation decisions. Inputs may include price information, credit data, liquidity statistics, and other factors specific to the financial instrument. Observable inputs reflect market data obtained from independent sources. In contrast, unobservable inputs reflect the entity's assumptions about how market participants would value the financial instrument. Valuation techniques used under U.S. GAAP must maximize the use of observable inputs to the extent available.

A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The following describes the hierarchy of inputs used to measure fair value and the primary valuation methodologies used for financial instruments measured at fair value on a recurring basis:

**Level 1** - Investments whose values are based on quoted market prices in active markets for identical assets or liabilities are classified as Level 1. Level 1 investments include active listed equities and certain short term fixed income securities. Such investments are valued based upon the closing price quoted on the last trading date on or before the reporting date on the principal market, without adjustment.

**Level 2** - Investments that trade in markets that are not actively traded, but are valued based on quoted market prices, dealer quotations, or alternative pricing sources for similar assets or liabilities are classified as Level 2. These investments include certain U.S. government and sovereign obligations, government agency obligations, investment grade corporate bonds and certain limited marketable securities.

Privately negotiated over-the-counter (OTC) derivatives such as forward currency contracts, total return swaps, and interest rate swaps are typically classified as Level 2 (see Note 7). In instances where quotations received from counterparties or valuation models are used, the value of an OTC derivative depends upon the contractual terms of the instrument as well as the availability and reliability of observable inputs. Such inputs include market prices for reference securities, yield curves, or credit curves.

**Level 3** - Investments classified as Level 3 have significant unobservable inputs, as they trade infrequently or not at all. The inputs into the determination of fair value of these investments are based upon the best information available and may require significant management judgment. These investments primarily consist of Stanford's direct real estate and alternative investments.

The following tables summarize Stanford's investment assets and liabilities within the fair value hierarchy and asset categories at August 31, 2021 and 2020, in thousands of dollars:

	LEVEL 1	LEVEL 2	LEVEL 3	TOTAL
<b>2021</b>				
Investment assets:				
Cash and short-term investments	\$ 100,821	\$ 680,224	\$ —	\$ 781,045
Collateral held for securities loaned	—	9,847	—	9,847
Public equities	3,759,859	7,028	—	3,766,887
Derivatives	—	(5,464)	—	(5,464)
Fixed income	1,198,382	3,962,700	—	5,161,082
Real estate	256,286	—	6,985,383	7,241,669
Natural resources	155,430	—	125,178	280,608
Private equities	484,310	146	7,289	491,745
Absolute return	—	—	16,662	16,662
Assets held by other trustees	—	—	169,182	169,182
Other	13,161	12,179	688,743	714,083
<b>INVESTMENTS SUBJECT TO FAIR VALUE LEVELING</b>	<b>\$ 5,968,249</b>	<b>\$ 4,666,660</b>	<b>\$ 7,992,437</b>	<b>18,627,346</b>
Investments measured using Net Asset Value <sup>1</sup>				35,412,199
<b>TOTAL CONSOLIDATED INVESTMENT ASSETS</b>				<b>\$ 54,039,545</b>
Investment liabilities:				
Income beneficiary share of split interest agreements	\$ —	\$ 728,530	\$ —	\$ 728,530
Net investment income excise tax	233,057	—	—	233,057
Securities lending	—	9,847	—	9,847
Accrued management fees	3,322	—	—	3,322
<b>LIABILITIES ASSOCIATED WITH INVESTMENTS</b>	<b>\$ 236,379</b>	<b>\$ 738,377</b>	<b>\$ —</b>	<b>\$ 974,756</b>

<sup>1</sup> Entities may estimate the fair value of certain investments by using NAV as a practical expedient as of the measurement date. Investments measured under this method are not categorized in the fair value hierarchy. The fair value amounts of such investments are presented for reconciliation purposes.

	LEVEL 1	LEVEL 2	LEVEL 3	TOTAL
2020				
Investment assets:				
Cash and short-term investments	\$ 294,757	\$ 1,721,489	\$ —	\$ 2,016,246
Collateral held for securities loaned	—	454	—	454
Public equities	1,921,948	4,499	—	1,926,447
Derivatives	—	(63,415)	—	(63,415)
Fixed income	540,219	2,191,582	—	2,731,801
Real estate	131,495	—	6,796,817	6,928,312
Natural resources	2,932	—	108,561	111,493
Private equities	28,590	—	539	29,129
Absolute return	912	—	22,293	23,205
Assets held by other trustees	—	—	143,238	143,238
Other	140,825	357	731,284	872,466
<b>INVESTMENTS SUBJECT TO FAIR VALUE LEVELING</b>	<b>\$ 3,061,678</b>	<b>\$ 3,854,966</b>	<b>\$ 7,802,732</b>	<b>14,719,376</b>
Investments measured using Net Asset Value <sup>1</sup>				26,209,864
<b>TOTAL CONSOLIDATED INVESTMENT ASSETS</b>				<b>\$ 40,929,240</b>
Investment liabilities:				
Income beneficiary share of split interest agreements	\$ —	\$ 610,409	\$ —	\$ 610,409
Net investment income excise tax	84,592	—	—	84,592
Securities lending	—	454	—	454
Securities sold, not yet purchased	277,949	—	—	277,949
Accrued management fees	29,492	—	—	29,492
<b>LIABILITIES ASSOCIATED WITH INVESTMENTS</b>	<b>\$ 392,033</b>	<b>\$ 610,863</b>	<b>\$ —</b>	<b>\$ 1,002,896</b>

<sup>1</sup> Entities may estimate the fair value of certain investments by using NAV as a practical expedient as of the measurement date. Investments measured under this method are not categorized in the fair value hierarchy. The fair value amounts of such investments are presented for reconciliation purposes.

### SUMMARY OF LEVEL 3 INVESTMENT ACTIVITIES AND TRANSFERS

The following tables present the activities for Level 3 investments for the years ended August 31, 2021 and 2020, in thousands of dollars:

FAIR VALUE MEASUREMENTS USING SIGNIFICANT UNOBSERVABLE INPUTS (LEVEL 3)	BEGINNING BALANCE AS OF SEPTEMBER 1, 2020	PURCHASES AND ADDITIONS	SALES AND MATURITIES	NET REALIZED AND UNREALIZED GAINS (LOSSES)	TRANSFERS IN*	TRANSFERS OUT*	ENDING BALANCE AS OF AUGUST 31, 2021
Real estate	\$ 6,796,817	\$ 124,463	\$ (6,502)	\$ 70,605	\$ —	\$ —	\$ 6,985,383
Natural resources	108,561	1,561	(29,456)	44,512	—	—	125,178
Private equities	539	175	—	6,575	—	—	7,289
Absolute return	22,293	—	—	(5,631)	—	—	16,662
Assets held by other trustees	143,238	1,129	(1,332)	26,024	123	—	169,182
Other	731,284	31,973	(77,180)	45,150	—	(42,484)	688,743
<b>TOTAL</b>	<b>\$ 7,802,732</b>	<b>\$ 159,301</b>	<b>\$ (114,470)</b>	<b>\$ 187,235</b>	<b>\$ 123</b>	<b>\$ (42,484)</b>	<b>\$ 7,992,437</b>

FAIR VALUE MEASUREMENTS USING SIGNIFICANT UNOBSERVABLE INPUTS (LEVEL 3)	BEGINNING BALANCE AS OF SEPTEMBER 1, 2019	PURCHASES AND ADDITIONS	SALES AND MATURITIES	NET REALIZED AND UNREALIZED GAINS (LOSSES)	TRANSFERS IN*	TRANSFERS OUT*	ENDING BALANCE AS OF AUGUST 31, 2020
Real estate	\$ 6,748,672	\$ 76,462	\$ (14,443)	\$ (13,874)	\$ —	\$ —	\$ 6,796,817
Natural resources	141,240	594	(2,394)	(30,879)	—	—	108,561
Private equities	1,263	—	(206)	(518)	—	—	539
Absolute return	25,911	—	—	(3,618)	—	—	22,293
Assets held by other trustees	140,011	1,535	(1,613)	3,473	—	(168)	143,238
Other	733,032	54,084	(32,836)	(10,707)	—	(12,289)	731,284
<b>TOTAL</b>	<b>\$ 7,790,129</b>	<b>\$ 132,675</b>	<b>\$ (51,492)</b>	<b>\$ (56,123)</b>	<b>—</b>	<b>\$ (12,457)</b>	<b>\$ 7,802,732</b>

\*Transfers in (out) are primarily due to reclassification of investments between asset classes and changes in the fair value hierarchy.

Net realized and unrealized gains (losses) in the tables above are included in the *Consolidated Statements of Activities* primarily as increases or decreases in reinvested gains by level of restriction. For the years ended August 31, 2021 and 2020, the change in unrealized gains (losses) for Level 3 investments still held at August 31, 2021 and 2020 was \$231.8 million and \$1.2 million, respectively.

### LEVEL 3 INVESTMENT VALUATION TECHNIQUES AND SIGNIFICANT UNOBSERVABLE INPUTS

The following table summarizes the significant unobservable inputs and valuation methodologies for Level 3 investments as of August 31, 2021 and 2020, in thousands of dollars.

For each investment category and respective valuation technique, the range of the significant unobservable input is dependent on the nature and characteristics of the investment and may vary at each balance sheet date.

INVESTMENT CATEGORIES	FAIR VALUE <sup>1</sup>	VALUATION TECHNIQUE	SIGNIFICANT UNOBSERVABLE INPUTS	RANGE		WEIGHTED AVERAGE	IMPACT TO VALUATION FROM AN INCREASE IN INPUT <sup>2</sup>
				MIN	MAX		
2021							
Real estate	\$ 6,073,613	Discounted cash flow	Discount rate	4.7 %	20.0 %	7.2%	Decrease
			Capitalization rate	5.5 %	8.0 %	6.1%	Decrease
Assets held by other trustees	149,532	Net present value	Discount rate	1.2 %	1.2 %	N/A	Decrease
Other	691,366	Market comparables	Recent transactions	N/A	N/A	N/A	N/A
TOTAL AMOUNT WITH SIGNIFICANT UNOBSERVABLE INPUTS \$6,914,511							
2020							
Real estate	\$ 6,003,980	Discounted cash flow	Discount rate	4.0 %	20.0 %	7.1%	Decrease
			Capitalization rate	5.5 %	9.0 %	6.6%	Decrease
Assets held by other trustees	126,349	Net present value	Discount rate	0.4 %	0.4 %	N/A	Decrease
Other	678,484	Market comparables	Recent transactions	N/A	N/A	N/A	N/A
TOTAL AMOUNT WITH SIGNIFICANT UNOBSERVABLE INPUTS \$6,808.813							

<sup>1</sup> \$1.0 billion and \$968.4 million of Level 3 investments at August 31, 2021 and 2020, respectively, are valued using third-party valuations, other market comparables or recent transactions as an approximation of fair value.

<sup>2</sup> Unless otherwise noted, this column represents the directional change in the fair value of the Level 3 investments that would have resulted from an increase to the corresponding unobservable input. A decrease to the unobservable input would have the opposite effect. Significant increases and decreases in these unobservable inputs in isolation would result in significantly higher or lower fair value measurements.

### INVESTMENT-RELATED COMMITMENTS

The University is obligated under certain alternative investment agreements to advance additional funding up to specified levels over a period of several years. The following table presents significant terms of such agreements including redemption terms, notice periods, and remaining life for all related alternative investments at August 31, 2021, in thousands of dollars:

ASSET CLASS	FAIR VALUE	UNFUNDED COMMITMENT	REMAINING LIFE (YEARS)	REDEMPTION TERMS
Public equities	\$ 8,826,899	\$ 44,034	0 to 5	Generally, lock-up provisions ranging from 0 to 3 years. After initial lock up expires, redemptions are available on a rolling basis and require 30 to 90 days prior notification.
Real estate	1,897,817	1,255,774	0 to 9	Not eligible for redemption
Natural resources	1,507,840	620,941	0 to 9	Not eligible for redemption
Private equities	16,602,400	4,493,174	0 to 20	Not eligible for redemption
Absolute return	6,758,761	532,956	0 to 3	Generally, lock-up provisions ranging from 0 to 3 years. After initial lock up expires, redemptions are available on a rolling basis and require 30 to 90 days prior notification.
<b>TOTAL</b>	<b>\$35,593,717</b>	<b>\$ 6,946,879</b>		

## OFFSETS TO INVESTMENT-RELATED ASSETS AND LIABILITIES

Financial instruments with off-balance sheet risk such as derivatives, securities lending agreements, securities sold, not yet purchased and repurchase agreements are subject to counterparty credit risk. The University seeks to control this risk in various ways, such as entering into transactions with counterparties with high creditworthiness, establishing and monitoring credit limits, and requiring collateral in certain situations.

The University generally maintains master netting agreements and collateral agreements with its counterparties. These agreements provide the University the right to net a counterparty's rights and obligations under the agreement and to liquidate and offset collateral against any net amount owed by the counterparty, in the event of default by the counterparty, such as bankruptcy or a failure to pay or perform. For certain derivatives, a master netting arrangement allows the counterparty to net any of its applicable liabilities or payment obligations to the University against any collateral previously provided or received (see Note 7).

The University may enter into repurchase and reverse repurchase agreements to sell or purchase securities to or from the counterparty with an agreement to repurchase or sell the same securities from or to the counterparty at a predetermined price.

The following table presents information about the gross amounts of assets and liabilities, the offset of these instruments and the related collateral amounts as of August 31, 2021 and 2020, in thousands of dollars:

	GROSS AMOUNTS OF ASSETS AND LIABILITIES	OFFSET AMOUNTS	NET AMOUNTS	COLLATERAL RECEIVED (PLEDGED) <sup>2</sup>	NET EXPOSURE
<b>2021</b>					
Assets:					
Derivatives <sup>1</sup>	\$ 2	\$ (5,466)	\$ (5,464)	\$ (5,464)	\$ —
Repurchase agreements <sup>3</sup>	132,142	—	132,142	132,142	—
<b>TOTAL</b>	<b>132,144</b>	<b>(5,466)</b>	<b>126,678</b>	<b>126,678</b>	<b>—</b>
Liabilities:					
Derivatives <sup>1</sup>	5,466	(5,466)	—	—	—
Securities lending	9,847	—	9,847	(9,847)	—
<b>TOTAL</b>	<b>\$ 15,313</b>	<b>\$ (5,466)</b>	<b>\$ 9,847</b>	<b>\$ (9,847)</b>	<b>\$ —</b>
<b>2020</b>					
Assets:					
Derivatives <sup>1</sup>	\$ 2,925	\$ (66,340)	\$ (63,415)	\$ (63,415)	\$ —
Repurchase agreements <sup>3</sup>	585,945	—	585,945	585,945	—
<b>TOTAL</b>	<b>588,870</b>	<b>(66,340)</b>	<b>522,530</b>	<b>522,530</b>	<b>—</b>
Liabilities:					
Derivatives <sup>1</sup>	66,340	(66,340)	—	—	—
Securities sold, not yet purchased	277,949	—	277,949	(277,949)	—
Securities lending	454	—	454	(454)	—
<b>TOTAL</b>	<b>\$ 344,743</b>	<b>\$ (66,340)</b>	<b>\$ 278,403</b>	<b>\$ (278,403)</b>	<b>\$ —</b>

<sup>1</sup> Gross derivative assets less gross derivative liabilities are presented as "derivatives" in the investment assets table.

<sup>2</sup> These collateral amounts received (pledged) are limited to the asset balance and accordingly, do not include any excess collateral received.

<sup>3</sup> Repurchase agreements are included in "Cash and short-term investments" in the investment assets table.

## INVESTMENT RETURNS

Total investment returns for the years ended August 31, 2021 and 2020, in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
Investment income	\$ 263,205	\$ 76,578	\$ 2,869	\$ 342,652
Net realized and unrealized gains	10,884,804	808,700	357,325	12,050,829
<b>TOTAL INVESTMENT RETURNS, NET</b>	<b>\$ 11,148,009</b>	<b>\$ 885,278</b>	<b>\$ 360,194</b>	<b>\$ 12,393,481</b>
Reconciliation to <i>Statements of Activities</i> :				
Total investment income distributed for operations	\$ 1,731,388	\$ 1,095	\$ 18,799	\$ 1,751,282
Increase in reinvested gains:				
Without donor restrictions	4,468,169	871,876	208,623	5,548,668
With donor restrictions	4,676,143	12,307	129,446	4,817,896
Change in value of split-interest agreements, net	119,227	—	3,326	122,553
Adjustments for actuarial re-evaluations and maturities of split-interest agreements	153,082	—	—	153,082
<b>TOTAL INVESTMENT RETURNS, NET</b>	<b>\$ 11,148,009</b>	<b>\$ 885,278</b>	<b>\$ 360,194</b>	<b>\$ 12,393,481</b>
<b>2020</b>				
Investment income	\$ 265,902	\$ 65,873	\$ 3,244	\$ 335,019
Net realized and unrealized gains	2,442,886	163,510	98,974	2,705,370
<b>TOTAL INVESTMENT RETURNS, NET</b>	<b>\$ 2,708,788</b>	<b>\$ 229,383</b>	<b>\$ 102,218</b>	<b>\$ 3,040,389</b>
Reconciliation to <i>Statements of Activities</i> :				
Total investment income distributed for operations	\$ 1,642,193	\$ 1,533	\$ 17,390	\$ 1,661,116
Increase in reinvested gains:				
Without donor restrictions	516,024	224,036	52,070	792,130
With donor restrictions	484,730	3,814	30,879	519,423
Change in value of split-interest agreements, net	14,414	—	1,879	16,293
Adjustments for actuarial re-evaluations and maturities of split-interest agreements	51,427	—	—	51,427
<b>TOTAL INVESTMENT RETURNS, NET</b>	<b>\$ 2,708,788</b>	<b>\$ 229,383</b>	<b>\$ 102,218</b>	<b>\$ 3,040,389</b>

Investment returns are net of investment management expenses, including both external management fees and internal University investment-related salaries, benefits and operating expenses, and the portion of interest expense and amortization related to the April 2009 bond issuance held for liquidity purposes (see Note 9).

## FUTURE MINIMUM RENTAL INCOME

As part of its investment portfolio, Stanford holds certain investment properties that it leases to third parties. Future minimum rental income due from the Stanford Shopping Center, the Stanford Research Park and other properties under non-cancellable leases in effect with tenants at August 31, 2021, in thousands of dollars, is as follows:

	FUTURE MINIMUM RENTAL INCOME			
YEAR ENDING AUGUST 31	UNIVERSITY	SHC	LPCH	CONSOLIDATED
2022	\$ 154,633	\$ 3,640	\$ 1,728	\$ 160,001
2023	148,604	2,480	906	151,990
2024	130,295	1,706	563	132,564
2025	111,070	681	308	112,059
2026	102,632	162	214	103,008
Thereafter	2,394,641	8,750	127	2,403,518
<b>TOTAL</b>	<b>\$ 3,041,875</b>	<b>\$ 17,419</b>	<b>\$ 3,846</b>	<b>\$ 3,063,140</b>



## 7. Derivatives

Stanford, directly or through external investment managers on Stanford's behalf, utilizes various strategies to reduce investment and credit risks, to serve as a temporary surrogate for investment in stocks and bonds, to manage interest rate exposure on debt, and/or to manage specific exposure to foreign currencies. Futures, options and other derivative instruments are used to adjust elements of investment exposures to various securities, sectors, markets and currencies without actually taking a position in the underlying asset or basket of assets. Interest rate swaps are used to manage interest rate risk. With respect to foreign currencies, Stanford utilizes forward contracts and foreign currency options to manage exchange rate risk.

### INVESTMENT-RELATED DERIVATIVES

The following table presents amounts for investment-related derivatives, including the notional amount, the fair values at August 31, 2021 and 2020, and gains and losses for the years ended August 31, 2021 and 2020, in thousands of dollars:

	NOTIONAL AMOUNT <sup>1</sup>	GROSS DERIVATIVE ASSETS <sup>2</sup>	GROSS DERIVATIVE LIABILITIES <sup>2</sup>	REALIZED AND UNREALIZED LOSSES <sup>3</sup>
	AS OF AUGUST 31			YEAR ENDED AUGUST 31
<b>2021</b>				
Foreign exchange contracts	\$ 13,466	\$ 2	\$ 209	\$ (1,049)
Equity contracts <sup>4</sup>	379,694	—	5,257	(80,118)
<b>TOTAL</b>	<b>\$ 393,160</b>	<b>\$ 2</b>	<b>\$ 5,466</b>	<b>\$ (81,167)</b>
<b>2020</b>				
Foreign exchange contracts	\$ 11,432	\$ 405	\$ 13	\$ (2,283)
Equity contracts <sup>4</sup>	635,463	2,520	66,327	(58,065)
<b>TOTAL</b>	<b>\$ 646,895</b>	<b>\$ 2,925</b>	<b>\$ 66,340</b>	<b>\$ (60,348)</b>

<sup>1</sup> The notional amount is representative of the volume and activity of the respective derivative type during the years ended August 31, 2021 and 2020.

<sup>2</sup> Gross derivative assets less gross derivative liabilities of \$(5.5) million and \$(63.4) million as of August 31, 2021 and 2020, respectively, are presented as "derivatives" on the investment table in Note 6.

<sup>3</sup> Losses on derivatives are included in the Statements of Activities line "increase in reinvested gains" in "non-operating activities."

<sup>4</sup> Included in equity contracts are fair value hedging derivatives with a fair value of \$0 and \$(59.2) million as of August 31, 2021 and 2020, respectively. The realized and unrealized gains and (losses) related to these equity contracts were \$28.2 million and \$(85.0) million for the years ended August 31, 2021 and 2020, respectively.

### DEBT-RELATED DERIVATIVES

The University and SHC use interest rate exchange agreements to manage the interest rate exposure of their debt portfolios. Under the terms of the current agreements, the entities pay a fixed interest rate, determined at inception, and receive a variable rate on the underlying notional principal amount. Generally, the exchange agreements require mutual posting of collateral by the University and SHC and the counterparties if the termination values exceed a predetermined threshold dollar amount.

At August 31, 2021, the University had interest rate exchange agreements related to \$97.0 million of the outstanding balance of the CEFA Series S bonds in variable rate mode (see Note 9). The agreements, which have a weighted average interest rate of 3.68%, expire November 1, 2039. The notional amount and the fair value of the exchange agreements are included in the table below. Collateral posted with various counterparties was \$22.3 million and \$36.5 million at August 31, 2021 and 2020, respectively, and is included in the *Consolidated Statements of Financial Position*. In addition, the University issued an irrevocable standby letter of credit of \$15.0 million to support collateral requirements at August 31, 2021 and 2020 (see Note 9).

At August 31, 2021, SHC had interest rate exchange agreements expiring through November 2051 (see Note 9). The agreements require SHC to pay fixed interest rates to the counterparties varying from 3.37% to 4.08% in exchange for variable rate payments from the counterparties based on a percentage of the One Month London Interbank Offered Rate (LIBOR). The notional amount and the fair value of the exchange agreements are included in the table below. There was cash collateral required to be posted with counterparties at August 31, 2021 and 2020 of \$21.2 million and \$52.3 million, respectively.

The following table presents amounts for debt-related derivatives including the notional amount, the fair values at August 31, 2021 and 2020, and gains and losses for the years ended August 31, 2021 and 2020, in thousands of dollars:

	AS OF AUGUST 31, 2021		YEAR ENDED AUGUST 31, 2021	AS OF AUGUST 31, 2020		YEAR ENDED AUGUST 31, 2020
	NOTIONAL AMOUNT <sup>1</sup>	GROSS DERIVATIVE LIABILITIES <sup>2</sup>	UNREALIZED GAINS (LOSSES) <sup>3</sup>	NOTIONAL AMOUNT <sup>1</sup>	GROSS DERIVATIVE LIABILITIES <sup>2</sup>	UNREALIZED LOSSES <sup>3</sup>
Debt-related interest-rate contracts:						
University	\$ 97,000	\$ 43,257	\$ 10,557	\$ 97,000	\$ 53,815	\$ (5,521)
SHC	574,025	285,654	(67,638)	574,700	353,292	(36,496)
<b>TOTAL</b>	<b>\$ 671,025</b>	<b>\$ 328,911</b>	<b>\$ (57,081)</b>	<b>\$ 671,700</b>	<b>\$ 407,107</b>	<b>\$ (42,017)</b>

<sup>1</sup> The notional amount is representative of the volume and activity of the respective derivative type during the years ended August 31, 2021 and 2020.

<sup>2</sup> Fair value is measured using Level 2 inputs as defined in Note 6. Amounts are included in the Statements of Financial Position in "accounts payable and accrued expenses" and discussed more fully in Note 9.

<sup>3</sup> Gains (losses) on derivatives are included in the Statements of Activities as "swap interest and change in value of swap agreements" in "non-operating activities".

## 8. Plant Facilities

Plant facilities, net of accumulated depreciation, at August 31, 2021 and 2020, in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
Land and improvements	\$ 681,619	\$ 77,368	\$ 120,605	\$ 879,592
Buildings and building improvements	9,619,090	3,817,842	1,930,883	15,367,815
Furniture, fixtures and equipment	2,122,470	1,650,865	483,032	4,256,367
Utilities	956,104	—	—	956,104
Construction in progress	319,317	387,419	39,446	746,182
	13,698,600	5,933,494	2,573,966	22,206,060
Less accumulated depreciation	(6,015,428)	(2,314,043)	(797,959)	(9,127,430)
<b>PLANT FACILITIES, NET OF ACCUMULATED DEPRECIATION</b>	<b>\$ 7,683,172</b>	<b>\$ 3,619,451</b>	<b>\$ 1,776,007</b>	<b>\$ 13,078,630</b>
<b>2020</b>				
Land and improvements	\$ 678,817	\$ 76,495	\$ 120,605	\$ 875,917
Buildings and building improvements	9,135,323	3,799,636	1,924,900	14,859,859
Furniture, fixtures and equipment	2,056,812	1,546,599	469,868	4,073,279
Utilities	939,849	—	—	939,849
Construction in progress	476,690	293,180	27,558	797,428
	13,287,491	5,715,910	2,542,931	21,546,332
Less accumulated depreciation	(5,601,781)	(2,069,898)	(702,033)	(8,373,712)
<b>PLANT FACILITIES, NET OF ACCUMULATED DEPRECIATION</b>	<b>\$ 7,685,710</b>	<b>\$ 3,646,012</b>	<b>\$ 1,840,898</b>	<b>\$ 13,172,620</b>

At August 31, 2021, \$2.5 billion, \$1.4 billion, and \$363.6 million of fully depreciated plant facilities were still in use by the University, SHC, and LPCH, respectively, and are included in plant facilities and accumulated depreciation in the above table.

## 9. Notes and Bonds Payable

Notes and bonds payable for the University, SHC, and LPCH at August 31, 2021 and 2020, in thousands of dollars, are presented in the table below. The University is not an obligor or guarantor with respect to any obligations of SHC or LPCH, nor are SHC or LPCH obligors or guarantors with respect to obligations of the University or each other.

# Consolidated Financial Statements

	YEAR OF MATURITY	EFFECTIVE INTEREST RATE *	OUTSTANDING PRINCIPAL	
		2021/2020	2021	2020
<b>UNIVERSITY:</b>				
<b>Tax-exempt:</b>				
CEFA Fixed Rate Revenue Bonds:				
Series S	2040	3.18%	\$ 30,210	\$ 30,210
Series T	2023-2039	3.66%-4.30%	188,900	188,900
Series U	2032-2046	2.71%-4.25%	1,043,090	1,167,205
Series V	2029-2051	1.83%-3.12%	742,230	441,830
CEFA Variable Rate Revenue Bonds and Notes:				
Series L	2023	0.01%/0.07%	36,208	36,208
Series S	2040-2051	0.10%-0.12%/0.47%-0.90%	141,200	141,200
Commercial Paper		0.11%-0.21%	—	50,000
<b>Taxable:</b>				
Fixed Rate Notes and Bonds:				
Stanford University Bonds	2024	6.88%	150,000	150,000
Medium Term Note	2026	7.65%	50,000	50,000
Stanford University Series 2012	2042	4.01%	143,235	143,235
Stanford University Series 2013	2044	3.56%	150,115	150,115
Stanford University Series 2014	2054	4.25%	150,000	150,000
Stanford University Series 2015	2047	3.46%	250,000	250,000
Stanford University Series 2017	2048	3.65%	750,000	750,000
Stanford University Series 2019	2029	3.09%	121,000	121,000
Stanford University Series 2020	2027-2050	1.29%-2.41%	750,000	750,000
Other	2031	3.29%	480	3,480
Revolving Credit Facilities	2022-2024	0.43%	—	35,320
University notes and bonds payable			4,696,668	4,608,703
Unamortized issuance costs, premiums, and discounts, net			447,181	394,849
<b>UNIVERSITY TOTAL</b>			<b>\$ 5,143,849</b>	<b>\$ 5,003,552</b>
<b>SHC:</b>				
CHFFA Fixed Rate Revenue Bonds:				
2008 Series A-1	2021	3.84%	\$ —	\$ 675
2008 Series A-2	2022	3.81%/3.76%	450	1,450
2008 Series A-3	2022	3.81%/3.76%	375	1,175
2010 Series A	2021	3.84%	—	6,760
2012 Series A	2028-2051	3.98%	—	340,000
2012 Series B	2022-2023	2.52%/2.48%	14,985	21,795
2015 Series A	2052-2054	4.10%	100,000	100,000
2017 Series A	2022-2041	2.85%/2.84%	454,200	454,200
2020 Series A	2050	2.70%	170,120	170,120
2021 Series A	2025	0.42%	157,715	—
2018 Series Taxable Bonds	2049	3.80%	500,000	500,000
2020 Series Taxable Bonds	2030	3.31%	300,000	300,000
2021 Series Taxable Bonds	2051	3.03%	365,100	—
CHFFA Variable Rate Revenue Bonds:				
2008 Series B	2042-2046	0.07%/0.19%	168,200	168,200
2012 Series D	2021	0.67%	—	100,000
2015 Series B	2024	0.65%	—	75,000
SHC notes and bonds payable			2,231,145	2,239,375
Unamortized issuance costs, premiums, and discounts, net			87,635	101,533
<b>SHC TOTAL</b>			<b>\$ 2,318,780</b>	<b>\$ 2,340,908</b>
<b>LPCH:</b>				
CHFFA Fixed Rate Revenue Bonds:				
2012 Series A	2044-2051	4.32%/4.32%	\$ 200,000	\$ 200,000
2012 Series B	2013-2027	2.96%/2.91%	28,720	31,765
2014 Series A	2025-2043	3.84%/3.84%	100,000	100,000
2016 Series A	2016-2033	2.42%/2.36%	57,310	60,630
2016 Series B	2052-2055	3.34%/3.34%	100,000	100,000
2017 Series A	2019-2057	3.08%/3.06%	193,545	195,815
CHFFA Variable Rate Revenue Bonds:				
2014 Series B	2034-2043	0.46%/0.50%	100,000	100,000
Revolving Credit Facilities			—	30,000
LPCH notes and bonds payable			779,575	818,210
Unamortized issuance costs, premiums, and discounts, net			60,386	63,001
<b>LPCH TOTAL</b>			<b>\$ 839,961</b>	<b>\$ 881,211</b>
<b>CONSOLIDATED TOTAL</b>			<b>\$ 8,302,590</b>	<b>\$ 8,225,671</b>

\*Exclusive of interest rate exchange agreements (see Note 7).

The University borrows at tax-exempt rates through the California Educational Facilities Authority (CEFA), a conduit issuer. CEFA debt is a general unsecured obligation of the University. Although CEFA is the issuer, the University is responsible for the repayment of the tax-exempt debt. SHC and LPCH borrow at tax-exempt rates through the California Health Facilities Financing Authority (CHFFA). CHFFA debt is a general obligation of each of the hospitals. Payments of principal and interest on SHC's and LPCH's bonds are collateralized by a pledge of their respective revenues. Although CHFFA is the issuer, each hospital is responsible for the repayment of its respective tax-exempt debt.

The University's long-term ratings of AAA/Aaa/AAA were affirmed in March 2021 by S&P Global Ratings, Moody's Investors Service, and Fitch Ratings, respectively. In April 2021, SHC's long-term ratings were affirmed by S&P Global Ratings, Moody's Investors Service, and Fitch Ratings at AA-/Aa3/AA, respectively. LPCH's long-term ratings of A+/A1/AA- were affirmed by S&P Global Ratings and Moody's Investors Service in March 2021 and by Fitch Ratings in April 2021, respectively.

SHC and LPCH are each party to separate master trust indentures that include, among other requirements, limitations on the incurrence of additional indebtedness, liens on property, restrictions on disposition or transfer of assets and compliance with certain financial ratios. Subject to applicable no-call provisions, SHC and LPCH may cause the redemption of the bonds, in whole or in part, prior to the stated maturities.

## UNIVERSITY

### Debt issuances and repayment activity

In May 2021, CEFA Series U-5 bond in the amount of \$124.1 million matured and was refunded with a portion of the proceeds of CEFA Series V-2.

In April 2021, the University issued tax-exempt fixed rate bonds CEFA Series V-2 in the amount of \$300.4 million, maturing on April 1, 2051. The series was comprised of two tranches; the first tranche of \$155.0 million with a coupon rate of 2.25% plus an original issue discount of \$4.9 million and subject to an optional redemption at par on or after April 1, 2031; and the second tranche of \$145.4 million with a coupon rate of 5.00% plus an original issue premium of \$79.5 million and subject to an optional make-whole call redemption. The tranches have yields of 2.40% and 2.42%, respectively. The bonds carry dual Sustainability and Climate Bond Certified designations based on the use of proceeds and an assessment by an independent verification agent. Proceeds are being used to refinance CEFA Series U-5, and to finance or refinance certain capital projects of the University.

In June 2020, the University issued taxable fixed rate bonds (Series 2020 A) in the amount of \$750.0 million. The series was comprised of \$300.0 million maturing on June 1, 2027 and \$450.0 million maturing on June 1, 2050 and bear interest yields of 1.29% and 2.41%, respectively. Proceeds from the taxable Series 2020 A are to be used for general University purposes.

The University has two unsecured revolving credit facilities with a \$250.0 million and \$175.0 million capacity, respectively. Funds drawn on the revolving credit facilities bear interest at a floating rate equal to the applicable LIBOR rate plus a specified margin. The amount outstanding on these credit facilities was \$0 and \$35.3 million at August 31, 2021 and 2020, respectively.

The University's taxable and tax-exempt commercial paper authorized borrowing capacity was \$500.0 million and \$300.0 million, respectively, at both August 31, 2021 and 2020. Tax-exempt commercial paper of \$0 and \$50.0 million was outstanding at August 31, 2021 and 2020, respectively. No taxable commercial paper was outstanding at the end of either fiscal year.

### Variable rate debt subject to remarketing or tender

The University had \$177.4 million of revenue bonds in variable rate mode outstanding at August 31, 2021. CEFA Series L bonds bear interest at a weekly rate and CEFA Series S bonds bear interest at a commercial paper municipal rate for various interest periods of 270 days or less. In the event the University receives notice of any optional tender of these bonds, or if the bonds become subject to mandatory tender, the purchase price of the bonds will be paid from the remarketing of such bonds. However, if the remarketing proceeds are insufficient, the University will have a current obligation to purchase the bonds tendered. The University has identified several sources of funding including cash, money market funds, U.S. Treasury securities and agencies' discount notes to provide for the full and timely purchase price of any bonds tendered in the event of a failed remarketing.

**Letters of credit**

In December 2010, the University entered into a credit agreement and established a letter of credit facility under which the bank agreed to issue standby letters of credit in a principal amount not to exceed \$50.0 million. In June 2018, the facility was raised to \$75.0 million and in June 2020, the University decreased the facility to \$65.0 million. At August 31, 2021, irrevocable standby letters of credit of \$51.2 million were outstanding in the following amounts and for the following respective purposes: (1) \$15.0 million to support collateral requirements under certain interest rate exchange agreements discussed in *Note 7*; (2) \$32.1 million to serve as security for workers' compensation deductible insurance arrangements; and (3) \$4.1 million for other purposes. No amounts have been drawn on these letters of credit at August 31, 2021.

**SHC****Debt issuances and repayment activity**

In April 2021, CHFFA, on behalf of SHC, issued fixed rate revenue bonds (2021 Series A) in the aggregate principal amount of \$157.7 million plus an original issue premium of \$17.3 million. The bonds have a mandatory put date on August 15, 2025. Proceeds of the 2021 Series A bonds were used to refund the 2012 Series D and 2015 Series B bonds previously issued by CHFFA for the benefit of SHC.

In April 2021, SHC issued the 2021 Taxable Bonds in the amount of \$365.1 million. The bonds bear interest at a coupon rate of 3.03% and mature on August 15, 2051. Proceeds were used to advance refund the 2012 Series A bonds previously issued by CHFFA for the benefit of SHC. All advance refunded bonds are considered extinguished.

In April 2021, SHC established a \$150.0 million taxable commercial paper facility to be used for general corporate purposes. No amount was outstanding as of August 31, 2021.

In May 2020, at SHC's request and subsequent to the end of the original index floating rate period, US Bank extended its ownership of the \$100.0 million 2012 Series D Bonds at a new index floating rate period.

In May 2020, SHC extended its \$200.0 million revolving line of credit facility until May 2021. In November 2020, SHC extended its revolving line of credit facility to November 2021 and reduced its size to \$150.0 million, of which \$50.0 million is earmarked for the issuance of stand-by letters of credit. Drawdowns from the revolving credit facility bear interest at a floating rate equal to the applicable LIBOR plus a specified spread. No amounts were outstanding as of August 31, 2021 or August 31, 2020.

In April 2020, CHFFA, on behalf of SHC, issued fixed rate revenue bonds (2020 Series A) in the aggregate principal amount of \$170.1 million plus an original issue premium of \$19.9 million. Proceeds of the 2020 Series A Bonds were used to finance certain costs of the New Stanford Hospital project and refund the 2012 Series C variable rate revenue bonds.

In April 2020, SHC issued 2020 taxable fixed rate bonds in the amount of \$300.0 million. The bonds bear interest at a coupon rate of 3.31% and mature on August 15, 2030. Proceeds are available for general corporate purposes.

**Variable rate debt subject to remarketing or tender**

At August 31, 2021, SHC had \$168.2 million of revenue bonds in variable rate mode outstanding. The 2008 Series B-1 bonds bear interest at a weekly rate, and bondholders have the option to tender their bonds on a weekly basis. The 2008 Series B-2 bonds bear interest at the commercial paper rate for each commercial paper period of 270 days or less. Bondholders in commercial paper mode have the option to tender their bonds only at the end of the commercial paper rate period.

In the event SHC receives an optional tender notice of any of the 2008 Series B bonds, or if any bonds become subject to mandatory tender, the purchase price of the bonds will be paid from the remarketing of such bonds. However, if the remarketing proceeds are insufficient, SHC has an obligation to purchase any remaining bonds. SHC maintains sufficient liquidity to provide for the full and timely purchase price of any bonds tendered in the event of a failed remarketing.

**Letters of credit**

At August 31, 2021, SHC had irrevocable standby letters of credit in the aggregate amount of \$25.4 million posted with certain beneficiaries in the following amounts and for the following respective purposes: (i) \$23.2 million to serve as security for the workers' compensation self-insurance arrangement and (ii) \$2.2 million to serve as security deposits for certain construction projects being undertaken by SHC. No amounts have been drawn on these letters of credit at August 31, 2021 and 2020.

## LPCH

### Debt activity

In April 2021, CHFFA completed, on behalf of LPCH, the pricing of Forward Delivery 2022 Series A Bonds in the aggregate principal amount of \$206.7 million that is expected to settle in May 2022. Proceeds of the 2022 Series A bonds will be used for the legal defeasance and redemption of 2012 Series A and B bonds and to pay a portion of the costs of issuance.

LPCH has a \$200.0 million revolving credit facility with Bank of America which was set to expire in November 2022. There was \$0 and \$30.0 million drawn on the line of credit as of August 31, 2021 and 2020, respectively.

### Letters of credit

At August 31, 2021, LPCH had irrevocable standby letters of credit in the aggregate amount of \$9.4 million posted with certain beneficiaries in the following amounts and for the following respective purposes: (i) \$8.0 million to serve as security for the workers' compensation self-insurance arrangement, and (ii) \$1.4 million to serve as security deposits for construction, operation and maintenance of certain utility facilities. No amounts have been drawn on these letters of credit at August 31, 2021 and 2020.

## INTEREST

Stanford's interest expense, which includes settlements under the interest rate exchange agreements, amortized bond issuance costs and amortized bond premium or discount is recorded in "other operating expenses". Interest expense for the years ended August 31, 2021 and 2020, in thousands of dollars, is as follows:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
Interest expense, gross	\$ 159,912	\$ 73,309	\$ 31,982	\$ 265,203
Less:				
Interest income earned on unspent proceeds	(48)	—	—	(48)
Interest capitalized as a cost of construction	(4,580)	—	—	(4,580)
Interest expense which is classified as an investment expense	(4,345)	—	—	(4,345)
<b>INTEREST EXPENSE, NET</b>	<b>\$ 150,939</b>	<b>\$ 73,309</b>	<b>\$ 31,982</b>	<b>\$ 256,230</b>
<b>2020</b>				
Interest expense, gross	\$ 148,563	\$ 69,255	\$ 33,394	\$ 251,212
Less:				
Interest income earned on unspent proceeds	(2,031)	—	—	(2,031)
Interest capitalized as a cost of construction	(24,190)	(4,710)	—	(28,900)
Interest expense which is classified as an investment expense	(5,916)	—	—	(5,916)
<b>INTEREST EXPENSE, NET</b>	<b>\$ 116,426</b>	<b>\$ 64,545</b>	<b>\$ 33,394</b>	<b>\$ 214,365</b>

The University and SHC use interest rate exchange agreements to manage the interest rate exposure of their debt portfolios. University net payments on interest rate exchange agreements were \$3.5 million and \$2.8 million for the years ended August 31, 2021 and 2020, respectively. SHC net payments on interest rate exchange agreements were \$21.4 million and \$17.2 million for the years ended August 31, 2021 and 2020, respectively.

**PRINCIPAL PAYMENTS**

At August 31, 2021, scheduled principal payments on notes and bonds, in thousands of dollars, are as follows:

YEAR ENDING AUGUST 31	PRINCIPAL PAYMENTS			
	UNIVERSITY	SHC	LPCH	CONSOLIDATED
2022 Variable debt subject to remarketing	\$ 177,408	\$ 168,200	\$ —	\$ 345,608
2022 Other	—	15,505	9,045	24,550
2023	51,765	17,065	9,490	78,320
2024	150,000	13,475	9,980	173,455
2025	—	175,330	10,405	185,735
2026	75,360	18,480	10,920	104,760
Thereafter	4,242,135	1,823,090	729,735	6,794,960
<b>TOTAL</b>	<b>\$4,696,668</b>	<b>\$2,231,145</b>	<b>\$ 779,575</b>	<b>\$ 7,707,388</b>



## 10. Net Assets

Net assets without donor restrictions include Board-designated funds functioning as endowment (see *Note 11*), net investment in plant facilities and other operating funds.

Net assets with donor restrictions consist primarily of endowment gifts that are limited for long-term investment, and accumulated appreciation that may be appropriated for expenditure by the University (see *Note 11*). Net assets with donor restrictions also include gifts and pledges that are subject to donor-imposed restrictions that expire with the passage of time, payment of pledges, and/or actions of the University, and other funds including Stanford's net equity in split-interest agreements and student loans.

Net assets at August 31, 2021 and 2020, in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>2021</b>					
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS</b>					
Board designated endowment - Funds functioning as endowment	\$ 17,556,924	\$ —	\$ 162,832	\$ —	\$ 17,719,756
Net investment in plant facilities and other plant funds	4,597,835	2,086,049	936,046	—	7,619,930
Operating funds	5,347,454	3,607,109	1,278,290	(120,215)	10,112,638
<b>Total net assets without donor restrictions</b>	<b>27,502,213</b>	<b>5,693,158</b>	<b>2,377,168</b>	<b>(120,215)</b>	<b>35,452,324</b>
<b>NET ASSETS WITH DONOR RESTRICTIONS</b>					
Subject to expenditure for specified purpose:					
Gifts with undecided purpose restrictions	642,923	—	—	—	642,923
Plant facilities	157,218	10,353	57,512	—	225,083
<b>Total</b>	<b>800,141</b>	<b>10,353</b>	<b>57,512</b>	<b>—</b>	<b>868,006</b>
Subject to passage of time:					
Pledges receivable	794,845	48,860	86,913	—	930,618
Other funds	346,120	49,442	36,777	—	432,339
<b>Total</b>	<b>1,140,965</b>	<b>98,302</b>	<b>123,690</b>	<b>—</b>	<b>1,362,957</b>
Subject to University's spending policy:					
Accumulated appreciation	12,127,538	27,305	232,034	—	12,386,877
Subject to restrictions in perpetuity:					
Endowment funds	7,959,566	15,373	260,975	—	8,235,914
Pledges receivable	755,469	—	2,567	—	758,036
Other funds	330,344	—	—	—	330,344
<b>Total</b>	<b>9,045,379</b>	<b>15,373</b>	<b>263,542</b>	<b>—</b>	<b>9,324,294</b>
<b>Total net assets with donor restrictions</b>	<b>23,114,023</b>	<b>151,333</b>	<b>676,778</b>	<b>—</b>	<b>23,942,134</b>
<b>TOTAL NET ASSETS</b>	<b>\$50,616,236</b>	<b>\$5,844,491</b>	<b>\$3,053,946</b>	<b>\$ (120,215)</b>	<b>\$ 59,394,458</b>

# Consolidated Financial Statements

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
2020					
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS</b>					
Board designated endowment - Funds functioning as endowment	\$ 13,707,220	\$ —	\$ 128,521	\$ —	\$ 13,835,741
Net investment in plant facilities and other plant funds	4,635,526	2,090,908	989,687	—	7,716,121
Operating funds	4,342,548	2,102,997	1,010,527	(101,159)	7,354,913
Total net assets without donor restrictions	22,685,294	4,193,905	2,128,735	(101,159)	28,906,775
<b>NET ASSETS WITH DONOR RESTRICTIONS</b>					
Subject to expenditure for specified purpose:					
Gifts with undecided purpose restrictions	522,996	—	—	—	522,996
Plant facilities	69,902	5,364	45,197	—	120,463
Total	592,898	5,364	45,197	—	643,459
Subject to passage of time:					
Pledges receivable	677,316	47,396	54,949	—	779,661
Other funds	280,489	49,534	38,501	—	368,524
Total	957,805	96,930	93,450	—	1,148,185
Subject to University's spending policy:					
Accumulated appreciation	7,674,107	16,616	121,883	—	7,812,606
Subject to restrictions in perpetuity:					
Endowment funds	7,435,236	14,633	248,855	—	7,698,724
Pledges receivable	692,101	—	3,068	—	695,169
Other funds	267,941	—	—	—	267,941
Total	8,395,278	14,633	251,923	—	8,661,834
Total net assets with donor restrictions	17,620,088	133,543	512,453	—	18,266,084
<b>TOTAL NET ASSETS</b>	<b>\$40,305,382</b>	<b>\$4,327,448</b>	<b>\$2,641,188</b>	<b>\$ (101,159)</b>	<b>\$ 47,172,859</b>

## 11. Endowments

The University classifies a substantial portion of its financial resources as endowment, which is invested to generate income to support operating and strategic initiatives. The endowment, which includes endowed lands, is comprised of pure endowment funds, term endowment funds, and funds functioning as endowment (FFE). Depending on the nature of the donor's stipulation, these resources are recorded as net assets with donor restrictions or net assets without donor restrictions. Term endowments are similar to other endowment funds except that, upon the passage of a stated period of time or the occurrence of a particular event, all or part of the principal may be expended. Accordingly, term endowments are classified as net assets with donor restrictions until expiration of the term. FFE are University resources designated by the Board as endowment and are invested for long-term appreciation and current income. These assets, however, remain available and may be spent at the Board's discretion. Accordingly, FFE are recorded as net assets without donor restrictions.

Stanford classifies as net assets with donor restrictions (a) the original value of gifts donated to the endowment with donor restrictions and (b) accumulations to the endowment with donor restrictions made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund. The remaining accumulation to the endowment funds that are required to be maintained in perpetuity in accordance with the direction of the applicable donor gift instrument, is classified as net assets with donor restrictions until those amounts are authorized for expenditure. The aggregate amount by which fair value was below historic value was \$0 and \$2.8 million at August 31, 2021 and 2020, respectively.

Endowment funds by net asset classification at August 31, 2021 and 2020, in thousands of dollars, are as follows:

	2021	2020
University endowment		
Endowment funds without donor restrictions:		
Funds functioning as endowment	\$ 17,556,924	\$ 13,707,220
Endowment funds with donor restrictions:		
Original donor-restricted gift amount and gains maintained in perpetuity	7,959,566	7,435,236
Term endowment and related gains	264,314	196,583
Additional accumulated gains available for expenditure, subject to spending policy	12,007,383	7,609,072
Total endowment funds with donor restrictions	20,231,263	15,240,891
University endowment	37,788,187	28,948,111
LPCH endowment		
Endowment funds without donor restrictions:		
Funds functioning as endowment	162,832	128,521
Endowment funds with donor restrictions	509,796	390,056
LPCH endowment	672,628	518,577
SHC endowment funds with donor restrictions	42,678	31,249
<b>TOTAL ENDOWMENT FUNDS</b>	<b>\$ 38,503,493</b>	<b>\$ 29,497,937</b>

Most of Stanford's endowment is invested in the MP. The return objective for the MP is to generate optimal long-term total return while maintaining an appropriate level of risk. Investment returns are achieved through both capital appreciation (realized and unrealized gains) and current yield (interest and dividends). Portfolio asset allocation targets as well as expected risk, return and correlation among the asset classes are reevaluated regularly by Stanford Management Company.

## UNIVERSITY

Changes in the University's endowment, excluding pledges, for the years ended August 31, 2021 and 2020, in thousands of dollars, are as follows:

	NET ASSETS WITHOUT DONOR RESTRICTIONS	NET ASSETS WITH DONOR RESTRICTIONS	TOTAL
<b>2021</b>			
Endowment, beginning of year	\$ 13,707,220	\$ 15,240,891	\$ 28,948,111
Total investment returns, net	3,420,540	5,341,069	8,761,609
Amounts distributed for operations	(541,050)	(789,103)	(1,330,153)
Gifts, transfers and other changes in endowment:			
Current year gifts and pledge payments	405	371,678	372,083
Transfers of prior year gifts	5,303	59,159	64,462
EFP funds added to the endowment	1,302,134	—	1,302,134
Other funds added to (withdrawn from) the endowment, net	(337,628)	7,569	(330,059)
Total gifts, transfers and other changes in endowment	970,214	438,406	1,408,620
Total net increase in endowment	3,849,704	4,990,372	8,840,076
<b>ENDOWMENT, END OF YEAR</b>	<b>\$ 17,556,924</b>	<b>\$ 20,231,263</b>	<b>\$37,788,187</b>
<b>2020</b>			
Endowment, beginning of year	\$ 13,240,533	\$ 14,459,301	\$ 27,699,834
Total investment returns, net	874,236	1,237,640	2,111,876
Amounts distributed for operations	(534,497)	(820,561)	(1,355,058)
Gifts, transfers and other changes in endowment:			
Current year gifts and pledge payments	2,017	251,665	253,682
Transfers of prior year gifts	3,331	82,391	85,722
EFP funds added to the endowment	148,692	—	148,692
Other funds added to (withdrawn from) the endowment, net	(27,092)	30,455	3,363
Total gifts, transfers and other changes in endowment	126,948	364,511	491,459
Total net increase in endowment	466,687	781,590	1,248,277
<b>ENDOWMENT, END OF YEAR</b>	<b>\$ 13,707,220</b>	<b>\$ 15,240,891</b>	<b>\$28,948,111</b>

Approximately 13% of the University's endowment is invested in real estate on Stanford's lands, including the Stanford Research Park. This portion of the endowment includes the present value of ground leases, and rental properties that have been developed on Stanford lands. The net operating income from these properties is distributed each year for University operations.

Through the combination of investment strategy and payout policy, the University strives to provide a reasonably consistent payout from endowment to support operations, while preserving the purchasing power of the endowment adjusted for inflation.

The Board approves the amounts to be paid out annually from endowment funds invested in the MP. Consistent with the Uniform Prudent Management of Institutional Funds Act, when determining the appropriate payout the Board considers the purposes of the University and the endowment, the duration and preservation of the endowment, general economic conditions, the possible effect of inflation or deflation, the expected return from income and the appreciation of investments, other resources of the University, and the University's investment policy.

The current Board approved targeted spending rate is 5.5%. The payout amount is determined by applying a smoothing rule designed to mitigate the impact of short-term market volatility on the flow of funds to support operations. The Board has the authority to override the smoothing rule and set the payout rate directly. For FY21 in response to COVID-19 concerns the Board approved the creation of two payout rates, one for student aid funds and the other for non-student aid funds. The rate for student aid funds remained at the rate previously approved in February 2020. The Board, however, cut the rate by 10% for non-student aid funds. The

sources of payout are earned income on endowment assets (interest, dividends, rents and royalties), realized capital gains and FFE, as needed and as available.

### SHC

SHC's endowment is intended to generate investment income to support its current operating and strategic initiatives. SHC invests all of its endowment in the University's MP. The endowments are subject to the same investment and spending strategies that the University employs. "Amounts distributed for operations" in the table below represents SHC's current year endowment payout spent for designated purposes. All of SHC's endowment is donor restricted. Changes in SHC's endowment, excluding pledges, for the years ended August 31, 2021 and 2020, in thousands of dollars, are as follows:

	2021	2020
Endowment, beginning of year	\$ 31,249	\$ 24,353
Total investment returns, net	11,028	2,213
Amounts distributed for operations	(492)	(519)
Gifts and pledge payments	740	5,202
Other	153	—
Total net increase in endowment	11,429	6,896
<b>ENDOWMENT, END OF YEAR</b>	<b>\$ 42,678</b>	<b>\$ 31,249</b>

## LPCH

LPCH's endowment is intended to generate investment income that can be used to support their current operating and strategic initiatives. The endowment includes funds held by LPCH and Lucile Packard Foundation for Children's Health (LPFCH). LPCH is the sole member of LPFCH, a public charity, whose mission is to elevate the priority of children's health and increase the quality and accessibility of children's health care through leadership and direct investment. LPCH invests the majority of its endowment in the University's MP, and LPFCH invests its endowment in other long-term investments.

LPCH's Board of Directors has adopted the University's investment and spending policies for its donor-restricted and board designated funds functioning as an endowment that provide for annual amounts (payout) to be distributed to appropriate restricted funds supporting operating and strategic activities of LPCH.

LPFCH's endowment is approved as board designated funds functioning as endowment by LPFCH's Board of Directors. LPFCH has a policy of appropriating for distribution each year an amount determined annually based on budget needs. The annual distribution is expected to average no more than 5% of the endowment fund's fair value. For individual years, it is expected to fall within a target range of 4.75% to 5.25% of the endowment fund's average fair value over the prior 12 quarters. Unspent program budget may be spent in future years subject to certain limits. LPFCH's Board of Directors may also appropriate an amount outside this target range. Accordingly, depending on anticipated activity and timing of the grant opportunities, actual spending may fall outside of the range. In establishing this policy, the LPFCH considered the long term expected return on its endowment. Over the long term, the LPFCH expects the current spending policy to allow its endowment to grow at a rate of expected inflation. This is consistent with the LPFCH's objective to maintain the purchasing power of the endowment assets held in perpetuity as well as to provide additional real growth through investment return.

Changes in LPCH's endowment, excluding pledges, for the years ended August 31, 2021 and 2020, in thousands of dollars, are as follows:

	NET ASSETS WITHOUT DONOR RESTRICTIONS	NET ASSETS WITH DONOR RESTRICTIONS	TOTAL
<b>2021</b>			
Endowment, beginning of year	\$ 128,521	\$ 390,056	\$ 518,577
Total investment returns, net	39,886	130,731	170,617
Amounts distributed for operations	(5,607)	(18,799)	(24,406)
Gifts and pledge payments	32	8,393	8,425
Other	—	(585)	(585)
Total net increase in endowment	34,311	119,740	154,051
<b>ENDOWMENT, END OF YEAR</b>	<b>\$ 162,832</b>	<b>\$ 509,796</b>	<b>\$ 672,628</b>
<b>2020</b>			
Endowment, beginning of year	\$ 125,846	\$ 362,229	\$ 488,075
Total investment returns, net	9,154	30,789	39,943
Amounts distributed for operations	(2,358)	(17,390)	(19,748)
Gifts and pledge payments	430	15,159	15,589
Other	(4,551)	(731)	(5,282)
Total net increase in endowment	2,675	27,827	30,502
<b>ENDOWMENT, END OF YEAR</b>	<b>\$ 128,521</b>	<b>\$ 390,056</b>	<b>\$ 518,577</b>

## 12. Health Care Services Revenue

SHC and LPCH derive a majority of health care services revenue from contractual agreements with Medicare, Medi-Cal and other third-party payers that provide for payments at amounts different from established rates. Payments under these agreements and programs are based on a variety of payment models, including estimated retroactive audit adjustments under reimbursement agreements with third-party payers. Retroactive adjustments are estimated and recorded in the period the related services are rendered and adjusted in future periods, as final settlements are determined. Contracts, laws and regulations governing the Medicare and Medi-Cal programs are complex and subject to interpretation. As a result, it is reasonably possible that recorded estimates may change by a material amount in the near term.

A summary of payment arrangements with major third-party payers follows:

### **Medicare**

Inpatient acute care services rendered to Medicare program beneficiaries are paid at prospectively determined rates per discharge. These rates vary according to a patient classification system that is based on clinical, diagnostic and other factors. Medicare reimburses hospitals for covered outpatient services rendered to its beneficiaries by way of an outpatient prospective payment system based on ambulatory payment classifications.

Inpatient non-acute services, certain outpatient services and medical education costs related to Medicare beneficiaries are paid based, in part, on a cost reimbursement methodology subject to final settlement after submission of annual cost reports and audits thereof by the Medicare fiscal intermediary. The estimated amounts due to or from the program are reviewed and adjusted annually based on the status of such audits and any subsequent appeals. Differences between final settlements and amounts accrued in previous years are reported as adjustments to net health care services revenue in the year examination is substantially completed. Medicare cost reports have been audited by the Medicare administrative contractor through August 31, 2010 for SHC and August 31, 2019 for LPCH.

Professional services are reimbursed based on a fee schedule.

### **Medi-Cal**

The State reimburses hospitals for inpatient services rendered to Medi-Cal program beneficiaries based on a prospectively determined rate per discharge. Hospital outpatient and professional services are reimbursed based upon prospectively determined fee schedules.

The California Children's Services ("CCS") Program is a partnership between state and counties that provides medical case management for children in California diagnosed with serious chronic diseases. Currently, approximately 70% of CCS-eligible children are also Medi-Cal eligible. The Medi-Cal program reimburses their care.

### **Managed Care Organizations**

SHC and LPCH have entered into agreements with numerous third-party payers to provide patient care to beneficiaries under a variety of payment arrangements. These include arrangements with:

- Commercial insurance companies which reimburse at negotiated charges.
- Managed care contracts such as those with Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs), which reimburse at contracted or per diem rates, which are usually less than full charges.
- Counties in the State of California, which reimburse for certain indigent patients covered under county contracts.

## Uninsured

For uninsured patients that do not qualify for charity care, revenue is recognized on the basis of standard rates for services less an uninsured discount applied to the patient's account that approximates the average discount for managed care payers.

## Premium Revenue

SHC has capitated agreements with various HMOs to provide medical services to enrollees. Under these agreements, monthly payments are received based on the number of health plan enrollees. Additionally, SHC receives premium revenue from the Centers for Medicare & Medicaid Services ("CMS") to provide Medicare services to members. Premium revenue is recognized in the month in which the member is eligible for Medicare services as "health care services" in the *Consolidated Statements of Activities*. Costs are accrued when services are rendered under these contracts, including cost estimates of incurred but not reported ("IBNR") claims. The IBNR accrual (which is included in "accounts payable and accrued expenses") includes an estimate of the costs of services for which SHC is responsible, including referrals to outside healthcare providers.

The following table presents health care services revenue, net of price concessions, for the years ended August 31, in thousands of dollars:

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>2021</b>					
Patient care revenue, net:					
Medicare	\$ —	\$ 1,019,262	\$ 10,504	\$ —	\$ 1,029,766
Medi-Cal	—	131,372	391,598	—	522,970
Managed care	—	4,720,044	1,537,861	—	6,257,905
Self pay and other	—	140,074	198,753	—	338,827
Physician services and support (see Note 1)	1,334,418	41,296	—	(1,375,714)	—
Total patient care revenue, net	1,334,418	6,052,048	2,138,716	(1,375,714)	8,149,468
Premium revenue	—	118,741	—	—	118,741
Other services and support	44,601	—	—	(11,254)	33,347
<b>HEALTH CARE SERVICES REVENUE, NET</b>	<b>\$1,379,019</b>	<b>\$6,170,789</b>	<b>\$2,138,716</b>	<b>\$ (1,386,968)</b>	<b>\$ 8,301,556</b>
<b>2020</b>					
Patient care revenue, net:					
Medicare	\$ —	\$ 921,709	\$ 5,399	\$ —	\$ 927,108
Medi-Cal	—	108,751	375,499	—	484,250
Managed care	—	3,957,801	1,362,432	—	5,320,233
Self pay and other	—	114,470	140,532	—	255,002
Physician services and support (see Note 1)	1,235,774	38,207	—	(1,273,981)	—
Total patient care revenue, net	1,235,774	5,140,938	1,883,862	(1,273,981)	6,986,593
Premium revenue	—	116,971	—	—	116,971
Other services and support	42,872	—	—	(9,848)	33,024
<b>HEALTH CARE SERVICES REVENUE, NET</b>	<b>\$1,278,646</b>	<b>\$5,257,909</b>	<b>\$1,883,862</b>	<b>\$ (1,283,829)</b>	<b>\$ 7,136,588</b>

For the years ended August 31, 2021 and 2020, SHC recognized net health care services revenue adjustments of \$9.7 million and \$10.8 million, respectively, as a result of prior years' unfavorable developments related to reimbursement and appeals. LPCH had no significant adjustments to revenue for the years ended August 31, 2021 and 2020.



### Charity Care and Community Benefits

SHC and LPCH provide charity care, free of charge, to vulnerable populations. SHC's estimated cost of providing charity care was \$19.2 million and \$23.4 million, and LPCH's estimated cost of providing charity care was \$809 thousand and \$1.2 million for the years ended August 31, 2021 and 2020, respectively. This cost is estimated by calculating a ratio of total costs to gross patient service charges at established rates, and then multiplying that ratio by gross uncompensated patient service charges at established rates associated with providing care to charity patients. SHC received \$444 thousand and \$825 thousand during the years ended August 31, 2021 and 2020, respectively, from contributions that were restricted for the care of indigent patients.

SHC and LPCH also provide services to other patients under the Medicare, Medi-Cal and other publicly sponsored programs, which reimburse at amounts less than the cost of the services provided to the recipients. Estimated costs in excess of reimbursements for the Medicare, Medi-Cal and other publicly sponsored programs for the years ended August 31, 2021 and 2020 were \$1.5 billion and \$1.4 billion for SHC, and \$216.6 million and \$259.5 million for LPCH, respectively.

### Provider Fee

The State of California enacted legislation in 2009 as subsequently amended which established a Hospital Quality Assurance Fee (QAF) Program and a Hospital Fee Program. These programs impose a provider fee on certain California general acute care hospitals that, combined with federal matching funds, is used to provide supplemental payments to certain hospitals and support the State's effort to maintain health care coverage for children. California's participation in these programs was made permanent by a ballot initiative passed in November 2016. Specific portions of the program covering the period from July 1, 2017 to June 30, 2019, and July 1, 2019 to December 31, 2021, have not yet been approved by the Centers for Medicare and Medicaid Services (CMS). Accordingly, any potential activity under unapproved programs related to July 1, 2017 through August 31, 2021 have not been recorded in the *Consolidated Statements of Activities*.

Provider fee revenue is recorded in "health care services" while provider fee expense is recorded in "other operating expenses" in the *Consolidated Statements of Activities*. Provider fee revenue, net of expense, under the approved portions of the programs for the years ended August 31, in thousands of dollars, is as follows:

	SHC	LPCH	CONSOLIDATED
<b>2021</b>			
Revenue	\$ 46,008	\$ 65,992	\$ 112,000
Expense	(41,674)	(20,553)	(62,227)
<b>TOTAL</b>	<b>\$ 4,334</b>	<b>\$ 45,439</b>	<b>\$ 49,773</b>
<b>2020</b>			
Revenue	\$ 66,459	\$ 80,604	\$ 147,063
Expense	(54,914)	(23,845)	(78,759)
<b>TOTAL</b>	<b>\$ 11,545</b>	<b>\$ 56,759</b>	<b>\$ 68,304</b>

Deferred revenue and prepaid expense associated with unapproved programs will be recognized as revenue and expense upon CMS approval. Deferred revenue and prepaid expense as of August 31, 2021 and 2020, in thousands of dollars, is as follows:

	SHC	LPCH	CONSOLIDATED
<b>2021</b>			
Deferred revenue	\$ 103,480	\$ 108,884	\$ 212,364
Prepaid expense	\$ 54,639	\$ 26,850	\$ 81,489
<b>2020</b>			
Deferred revenue	\$ 53,510	\$ 57,236	\$ 110,746
Prepaid expense	\$ 30,402	\$ 14,075	\$ 44,477

### 13. Gifts and Pledges

Gifts and pledges reported for financial statement purposes are recorded on the accrual basis. The Office of Development (OOD), which is the primary fundraising agent for the University and SHC, reports total gifts based on contributions received in cash or property during the fiscal year. Lucile Packard Foundation for Children's Health (LPCH) is the primary community fundraising agent for LPCH and the pediatric faculty and programs at the University's SOM. The following summarizes gifts and pledges reported for the years ended August 31, 2021 and 2020, per the *Consolidated Statements of Activities*, in thousands of dollars:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
Current year gifts in support of operations	\$ 288,110	\$ 204	\$ 5,401	\$ 293,715
Donor advised funds, net	3,395	—	—	3,395
Current year gifts not included in operations	408	—	—	408
Gifts and pledges, net - with donor restrictions	998,134	34,860	71,083	1,104,077
<b>TOTAL</b>	<b>\$1,290,047</b>	<b>\$ 35,064</b>	<b>\$ 76,484</b>	<b>\$ 1,401,595</b>
<b>2020</b>				
Current year gifts in support of operations	\$ 289,908	\$ 1,703	\$ 4,115	\$ 295,726
Donor advised funds, net	61,723	—	—	61,723
Current year gifts not included in operations	2,026	—	—	2,026
Gifts and pledges, net - with donor restrictions	684,985	22,084	32,172	739,241
<b>TOTAL</b>	<b>\$1,038,642</b>	<b>\$ 23,787</b>	<b>\$ 36,287</b>	<b>\$ 1,098,716</b>

### 14. Functional Expenses

Expenses are presented by functional classification in alignment with Stanford's mission of teaching, research and health care.

Major functional categories consist of the following:

- **Instruction and departmental research** includes teaching and internally funded research expenses.
- **Organized research - direct costs** include sponsored support costs.
- **Health care services** include patient care provided by SHC, LPCH, SOM faculty, and other health care related activities.
- **Auxiliary activities** include housing and dining services, intercollegiate athletics, Stanford Alumni Association, and other activities.
- **SLAC construction** includes the costs associated with major projects and facilities at the SLAC National Accelerator Laboratory.

Natural expenses attributable to more than one functional expense category are allocated using a variety of cost allocation techniques such as square footage and time and effort. Depreciation and facility operations and maintenance expenses are allocated to the functional categories directly or based on the square footage occupancy. Salaries and benefits expenses are allocated to functional categories directly based on time and effort incurred.

Expenses by functional and natural classification for the years ended August 31, 2021 and 2020 , in thousands of dollars, are as follows:

	SALARIES AND BENEFITS	DEPRECIATION	OTHER OPERATING EXPENSES	TOTAL OPERATING EXPENSES
<b>2021</b>				
<b>UNIVERSITY</b>				
Instruction and departmental research	\$ 1,466,994	\$ 127,426	\$ 471,731	\$ 2,066,151
Organized research - direct costs	787,963	75,607	485,473	1,349,043
Health care services	896,547	4,507	14,766	915,820
Auxiliary activities	147,226	125,069	276,614	548,909
Administration and general	348,890	56,052	171,942	576,884
Student services	181,233	6,501	149,351	337,085
Libraries	70,551	70,676	54,463	195,690
Development	84,716	4,346	12,262	101,324
SLAC construction	56,909	—	52,488	109,397
<b>TOTAL EXPENSES</b>	<b>4,041,029</b>	<b>470,184</b>	<b>1,689,090</b>	<b>6,200,303</b>
<b>SHC</b>				
Health care services	2,571,957	267,791	2,790,439	5,630,187
Administration and general	240,173	19,359	205,258	464,790
Development	1,092	—	12,795	13,887
<b>TOTAL EXPENSES</b>	<b>2,813,222</b>	<b>287,150</b>	<b>3,008,492</b>	<b>6,108,864</b>
<b>LPCH</b>				
Health care services	906,298	101,400	957,797	1,965,495
Administration and general	102,374	7,059	80,861	190,294
Development	14,538	882	9,369	24,789
<b>TOTAL EXPENSES</b>	<b>1,023,210</b>	<b>109,341</b>	<b>1,048,027</b>	<b>2,180,578</b>
<b>ELIMINATIONS</b>				
Instruction and departmental research	—	—	(9,209)	(9,209)
Health care services	—	—	(1,332,825)	(1,332,825)
Administration and general	—	—	(41,537)	(41,537)
Development	—	—	(12,606)	(12,606)
<b>TOTAL ELIMINATIONS</b>	<b>—</b>	<b>—</b>	<b>(1,396,177)</b>	<b>(1,396,177)</b>
<b>CONSOLIDATED</b>				
Instruction and departmental research	1,466,994	127,426	462,522	2,056,942
Organized research - direct costs	787,963	75,607	485,473	1,349,043
Health care services	4,374,802	373,698	2,430,177	7,178,677
Auxiliary activities	147,226	125,069	276,614	548,909
Administration and general	691,437	82,470	416,524	1,190,431
Student services	181,233	6,501	149,351	337,085
Libraries	70,551	70,676	54,463	195,690
Development	100,346	5,228	21,820	127,394
SLAC construction	56,909	—	52,488	109,397
<b>TOTAL EXPENSES</b>	<b>\$ 7,877,461</b>	<b>\$ 866,675</b>	<b>\$ 4,349,432</b>	<b>\$ 13,093,568</b>

# Consolidated Financial Statements

	SALARIES AND BENEFITS	DEPRECIATION	OTHER OPERATING EXPENSES	TOTAL EXPENSES
<b>2020</b>				
<b>UNIVERSITY</b>				
Instruction and departmental research	\$ 1,468,928	\$ 127,916	\$ 506,658	\$ 2,103,502
Organized research - direct costs	767,919	75,912	457,741	1,301,572
Health care services	842,633	3,342	18,066	864,041
Auxiliary activities	153,498	92,752	252,046	498,296
Administration and general	322,616	56,279	173,809	552,704
Student services	190,326	6,527	132,373	329,226
Libraries	70,592	70,102	53,688	194,382
Development	87,637	4,364	14,569	106,570
SLAC construction	57,991	—	57,641	115,632
<b>TOTAL EXPENSES</b>	<b>3,962,140</b>	<b>437,194</b>	<b>1,666,591</b>	<b>6,065,925</b>
<b>SHC</b>				
Health care services	2,312,459	236,553	2,525,025	5,074,037
Administration and general	234,959	18,526	204,940	458,425
Development	841	—	13,229	14,070
<b>TOTAL EXPENSES</b>	<b>2,548,259</b>	<b>255,079</b>	<b>2,743,194</b>	<b>5,546,532</b>
<b>LPCH</b>				
Health care services	826,294	111,493	881,231	1,819,018
Administration and general	95,246	8,953	74,618	178,817
Development	13,790	684	7,150	21,624
<b>TOTAL EXPENSES</b>	<b>935,330</b>	<b>121,130</b>	<b>962,999</b>	<b>2,019,459</b>
<b>ELIMINATIONS</b>				
Health care services	—	—	(1,220,589)	(1,220,589)
Administration and general	—	—	(50,797)	(50,797)
Development	—	—	(12,443)	(12,443)
<b>TOTAL ELIMINATIONS</b>	<b>—</b>	<b>—</b>	<b>(1,283,829)</b>	<b>(1,283,829)</b>
<b>CONSOLIDATED</b>				
Instruction and departmental research	1,468,928	127,916	506,658	2,103,502
Organized research - direct costs	767,919	75,912	457,741	1,301,572
Health care services	3,981,386	351,388	2,203,733	6,536,507
Auxiliary activities	153,498	92,752	252,046	498,296
Administration and general	652,821	83,758	402,570	1,139,149
Student services	190,326	6,527	132,373	329,226
Libraries	70,592	70,102	53,688	194,382
Development	102,268	5,048	22,505	129,821
SLAC construction	57,991	—	57,641	115,632
<b>TOTAL EXPENSES</b>	<b>\$ 7,445,729</b>	<b>\$ 813,403</b>	<b>\$ 4,088,955</b>	<b>\$12,348,087</b>

## 15. University Retirement Plans

The University provides retirement benefits through both defined contribution and defined benefit retirement plans for substantially all of its employees.

### DEFINED CONTRIBUTION PLAN

The University offers a defined contribution plan to eligible faculty and staff through the *Stanford Contributory Retirement Plan* (SCRCP). Employer contributions are based on a percentage of participant annual compensation, participant contributions and years of service. University and participant contributions are primarily invested in annuities and mutual funds. University contributions under the SCRCP, which are vested immediately to participants, were approximately \$197.6 million and \$191.1 million for the years ended August 31, 2021 and 2020, respectively.

### DEFINED BENEFIT PLANS

The University provides retirement and postretirement medical and other benefits through the *Staff Retirement Annuity Plan*, the *Faculty Retirement Incentive Program*, and the *Postretirement Benefit Plan* (the “Plans”). The obligations for the Plans, net of plan assets, are recorded in the *Consolidated Statements of Financial Position* as “accrued pension and postretirement benefit obligations.” These plans are described in more detail below.

#### Staff Retirement Annuity Plan

Retirement benefits for certain employees are provided through the *Staff Retirement Annuity Plan* (SRAP), a noncontributory plan. While the SRAP is closed to new participants, certain employees continue to accrue benefits. Contributions to the plan are made in accordance with the Employee Retirement Income Security Act (ERISA) based on actuarially determined amounts sufficient to meet the benefits to be paid to plan participants.

#### Faculty Retirement Incentive Program

The University provides a retirement incentive bonus for eligible faculty through the University *Faculty Retirement Incentive Program* (FRIP). The University’s faculty may become eligible for the FRIP program if they commit to retire within a designated window of time. At August 31, 2021 and 2020, there were no program assets. The University funds benefit payouts as they are incurred.

#### Postretirement Benefit Plan

The University provides health care benefits for retired employees through its *Postretirement Benefit Plan* (PRBP). The University’s employees and their covered dependents may become eligible for the PRBP upon the employee’s retirement and meeting specific years of service and age criteria. Retiree health plans are paid for, in part, by retiree contributions, which are adjusted annually. The University’s subsidy varies depending on whether the retiree is covered under the grandfathered design or the defined dollar benefit design. Medicare supplement options are provided for retirees over age 65.

The change in the Plans' assets, the related change in benefit obligations and the amounts recognized in the financial statements, in thousands of dollars, are as follows:

	SRAP	FRIP	PRBP	TOTAL
<b>2021</b>				
Fair value of plan assets, beginning of year	\$ 282,867	\$ —	\$ 291,126	\$ 573,993
Change in plan assets:				
Actual return on plan assets	30,779	—	60,019	90,798
Employer contributions	—	9,148	10,723	19,871
Plan participants' contributions	—	—	15,348	15,348
Benefits and plan expenses paid	(12,788)	(9,148)	(40,158) *	(62,094)
Plan settlements	(9,773)	—	—	(9,773)
<b>FAIR VALUE OF PLAN ASSETS, END OF YEAR</b>	<b>291,085</b>	<b>—</b>	<b>337,058</b>	<b>628,143</b>
Benefit obligation, beginning of year	318,081	191,691	662,172	1,171,944
Change in projected benefit obligation:				
Service cost	1,361	12,180	23,313	36,854
Interest cost	6,615	4,182	16,877	27,674
Plan participants' contributions	—	—	15,348	15,348
Plan settlements	(9,773)	—	—	(9,773)
Actuarial gain	(1,925)	(11,132)	(25,293)	(38,350)
Benefits and plan expenses paid	(12,788)	(9,148)	(40,158) *	(62,094)
<b>BENEFIT OBLIGATION, END OF YEAR</b>	<b>301,571</b>	<b>187,773</b>	<b>652,259</b>	<b>1,141,603</b>
<b>NET LIABILITY RECOGNIZED IN THE STATEMENTS OF FINANCIAL POSITION</b>	<b>\$ (10,486)</b>	<b>\$ (187,773)</b>	<b>\$ (315,201)</b>	<b>\$ (513,460)</b>
* Net of Medicare subsidy of \$1.1 million				
<b>2020</b>				
Fair value of plan assets, beginning of year	\$ 267,977	\$ —	\$ 258,016	\$ 525,993
Change in plan assets:				
Actual return on plan assets	33,460	—	42,155	75,615
Employer contributions	1,483	9,057	11,611	22,151
Plan participants' contributions	—	—	14,480	14,480
Benefits and plan expenses paid	(20,053)	(9,057)	(35,136) *	(64,246)
<b>FAIR VALUE OF PLAN ASSETS, END OF YEAR</b>	<b>282,867</b>	<b>—</b>	<b>291,126</b>	<b>573,993</b>
Benefit obligation, beginning of year	319,422	204,185	682,139	1,205,746
Change in projected benefit obligation:				
Service cost	1,505	12,132	22,999	36,636
Interest cost	8,450	5,562	20,550	34,562
Plan participants' contributions	—	—	14,480	14,480
Plan amendments	1,256	—	—	1,256
Actuarial loss (gain)	7,501	(21,131)	(42,860)	(56,490)
Benefits and plan expenses paid	(20,053)	(9,057)	(35,136) *	(64,246)
<b>BENEFIT OBLIGATION, END OF YEAR</b>	<b>318,081</b>	<b>191,691</b>	<b>662,172</b>	<b>1,171,944</b>
<b>NET LIABILITY RECOGNIZED IN THE STATEMENTS OF FINANCIAL POSITION</b>	<b>\$ (35,214)</b>	<b>\$ (191,691)</b>	<b>\$ (371,046)</b>	<b>\$ (597,951)</b>
* Net of Medicare subsidy of \$2.0 million				

The accumulated benefit obligation for the SRAP was \$300.8 million and \$317.2 million at August 31, 2021 and 2020, respectively.

Net periodic benefit expense and non-operating activities related to the Plans for the years ended August 31, 2021 and 2020, in thousands of dollars, includes the following components:

	SRAP	FRIP	PRBP	TOTAL
<b>2021</b>				
Service cost	\$ 1,361	\$ 12,180	\$ 23,313	\$ 36,854
<b>PERIODIC BENEFIT EXPENSE</b>	<b>1,361</b>	<b>12,180</b>	<b>23,313</b>	<b>36,854</b>
Non-operating:				
Interest cost	6,615	4,182	16,877	27,674
Expected return on plan assets	(12,055)	—	(17,468)	(29,523)
Amortization of:				
Prior service cost	850	—	373	1,223
Actuarial loss	654	—	—	654
Settlement loss	794	—	—	794
Non-operating periodic benefit cost	(3,142)	4,182	(218)	822
<b>NET PERIODIC BENEFIT COST<sup>1</sup></b>	<b>(1,781)</b>	<b>16,362</b>	<b>23,095</b>	<b>37,676</b>
Non-operating periodic benefit cost	(3,142)	4,182	(218)	822
Net actuarial loss (gain)	(20,649)	(11,132)	(67,844)	(99,625)
Amortization of:				
Prior service cost	(850)	—	(373)	(1,223)
Actuarial loss	(654)	—	—	(654)
Settlement loss	(794)	—	—	(794)
<b>TOTAL AMOUNTS RECOGNIZED IN NON-OPERATING ACTIVITIES</b>	<b>\$ (26,089)</b>	<b>\$ (6,950)</b>	<b>\$ (68,435)</b>	<b>\$ (101,474)</b>
<b>2020</b>				
Service cost	\$ 1,505	\$ 12,132	\$ 22,999	\$ 36,636
<b>PERIODIC BENEFIT EXPENSE</b>	<b>1,505</b>	<b>12,132</b>	<b>22,999</b>	<b>36,636</b>
Non-operating:				
Interest cost	8,450	5,562	20,550	34,562
Expected return on plan assets	(12,678)	—	(16,771)	(29,449)
Amortization of:				
Prior service cost	606	—	373	979
Actuarial loss	1,239	1,022	4,425	6,686
Non-operating periodic benefit cost	(2,383)	6,584	8,577	12,778
<b>NET PERIODIC BENEFIT COST<sup>1</sup></b>	<b>(878)</b>	<b>18,716</b>	<b>31,576</b>	<b>49,414</b>
Non-operating periodic benefit cost	(2,383)	6,584	8,577	12,778
New prior service cost	1,256	—	—	1,256
Net actuarial gain	(13,281)	(21,131)	(68,244)	(102,656)
Amortization of:				
Prior service cost	(606)	—	(373)	(979)
Actuarial loss	(1,239)	(1,022)	(4,425)	(6,686)
<b>TOTAL AMOUNTS RECOGNIZED IN NON-OPERATING ACTIVITIES</b>	<b>(16,253)</b>	<b>(15,569)</b>	<b>(64,465)</b>	<b>(96,287)</b>

<sup>1</sup>The components of net periodic benefit cost other than service cost are included in "pension and other postemployment benefit related changes other than service cost" in the Statement of Activities.

Cumulative amounts recognized in non-operating activities, but not yet recognized in net periodic benefit cost in the *Consolidated Statements of Activities*, are presented in the following table for the years ended August 31, 2021 and 2020, in thousands of dollars:

	SRAP	FRIP	PRBP	TOTAL
<b>2021</b>				
Prior service cost	\$ 3,830	\$ —	\$ 2,500	\$ 6,330
Net actuarial loss (gain)	24,510	4,742	(13,533)	15,719
<b>ACCUMULATED PLAN BENEFIT COSTS NOT YET RECOGNIZED IN NET PERIODIC BENEFIT COST</b>	<b>\$ 28,340</b>	<b>\$ 4,742</b>	<b>\$ (11,033)</b>	<b>\$ 22,049</b>
<b>2020</b>				
Prior service cost	\$ 4,680	\$ —	\$ 2,873	\$ 7,553
Net actuarial loss	46,607	15,874	54,311	116,792
<b>ACCUMULATED PLAN BENEFIT COSTS NOT YET RECOGNIZED IN NET PERIODIC BENEFIT COST</b>	<b>\$ 51,287</b>	<b>\$ 15,874</b>	<b>\$ 57,184</b>	<b>\$ 124,345</b>

The prior service costs and net actuarial loss expected to be amortized from non-operating activities to net periodic benefit cost in fiscal year 2022, in thousands of dollars, are as follows:

	SRAP	FRIP	PRBP	TOTAL
Prior service cost	\$ 850	\$ —	\$ 373	\$ 1,223

#### ACTUARIAL ASSUMPTIONS

The weighted average assumptions used to determine the benefit obligations and net periodic benefit cost for the Plans are shown below:

	SRAP		FRIP		PRBP	
	2021	2020	2021	2020	2021	2020
<b>BENEFIT OBLIGATIONS</b>						
Discount rate	2.34%	2.18%	2.43%	2.26%	2.67%	2.59%
Covered payroll growth rate	3.00%	3.00%	4.80%	4.79%	N/A	N/A
<b>NET PERIODIC BENEFIT COST</b>						
Discount rate	2.18%	2.78%	2.26%	2.82%	2.59%	3.06%
Expected returns on plan assets	4.50%	5.00%	N/A	N/A	6.00%	6.50%
Covered payroll growth rate	3.00%	3.00%	4.79%	4.25%	N/A	N/A

The expected long-term rate of return on asset assumptions for the SRAP and PRBP plans is 5.00% and 6.00%, respectively. The assumption is used in determining the expected returns on plan assets, a component of net periodic benefit expense (income), representing the expected return for the upcoming fiscal year on plan assets. This assumption is developed based on future expectations for returns in each asset class, as well as the target asset allocation of the portfolios. The use of expected long-term returns on plan assets may result in income that is greater or less than the actual returns of those plan assets in any given year. Over time, however, the expected long-term returns are designed to approximate the actual long-term returns, and therefore result in a pattern of income and cost recognition that more closely matches the pattern of the services provided by the employees. Differences between actual and expected returns are recognized as a component of non-operating activities and amortized as a component of net periodic benefit expense (income) over the service or life expectancy of the plan participants, depending on the plan, provided such amounts exceed the accounting standards threshold.

To determine the accumulated PRBP obligation at August 31, 2021, a 7.00%, 5.00% and 4.90% annual rate of increase in the cost of covered health care for Medical Pre-65, Medical Post-65, and Part D, respectively, was assumed for calendar year 2021 with all three rates declining gradually to 4.00% by 2045 and remaining at this rate thereafter.



Health care cost trend rate assumptions have a significant effect on the amounts reported for the health care plans. If the assumed health care cost trend were increased or decreased by 1%, the impact on the PRBP service and interest cost and the accumulated obligation are as follows, in thousands of dollars:

	1% INCREASE IN HEALTH CARE COST TREND RATE	1% DECREASE IN HEALTH CARE COST TREND RATE
Effect on PRBP total service and interest cost	\$ 10,594	\$ (7,881)
Effect on accumulated PRBP obligation	\$ 125,166	\$ (97,909)

### EXPECTED CONTRIBUTIONS

The University expects to contribute \$13.1 million to the FRIP, \$20.2 million to the PRBP, and does not expect to contribute to the SRAP during the fiscal year ending August 31, 2022.

### EXPECTED BENEFIT PAYMENTS

The following benefit payments, which reflect expected future service, are expected to be paid for the years ending August 31, in thousands of dollars:

YEAR ENDING AUGUST 31	SRAP	FRIP	PRBP	
			EXCLUDING MEDICARE SUBSIDY	EXPECTED MEDICARE PART D SUBSIDY
2022	\$ 31,889	\$ 13,137	\$ 22,524	\$ 2,352
2023	22,210	14,563	23,650	2,476
2024	20,315	11,640	24,820	2,591
2025	19,484	9,835	26,090	2,686
2026	19,452	10,225	27,399	2,791
2027 - 2031	83,702	57,035	156,317	15,928

### INVESTMENT STRATEGY

The University's Retirement Program Investment Committee, acting in a fiduciary capacity, has established formal investment policies for the assets associated with the University's funded plans (SRAP and PRBP). The investment strategy of the plans is to preserve and enhance the value of the plans' assets within acceptable levels of risk. Investments in the plans are diversified among asset classes, striving to achieve an optimal balance between risk and return, and income and capital appreciation. Because the liabilities of each of the plans are long-term, the investment horizon is primarily long-term, with adequate liquidity to meet short-term benefit payment obligations.

### CONCENTRATION OF RISK

The University manages a variety of risks, including market, credit, and liquidity risks, across its plan assets. Concentration of risk is defined as an undiversified exposure to one of the above-mentioned risks that increases the exposure of the loss of plan assets unnecessarily. Risk is minimized by predominately investing in broadly diversified index funds for public equities and fixed income. As of August 31, 2021, the University did not have concentrations of risk in any single entity, counterparty, sector, industry or country.

### PLAN ASSETS AND ALLOCATIONS

Current U.S. GAAP defines a hierarchy of valuation inputs for the determination of the fair value of plan assets as described in *Note 6*. As of August 31, 2021 and 2020, all of the assets of the PRBP and substantially all of the assets of the SRAP were categorized as Level 1 investments. The fair value of plan assets by asset category, in thousands of dollars, at August 31, 2021 and 2020 and actual allocations and weighted-average target allocations at August 31, 2021 are as follows:

	2021	2020	2021 ACTUAL ALLOCATION	2021 TARGET ALLOCATION
SRAP:				
Cash and cash equivalents	\$ 1,403	\$ 1,940	1%	0%
Public equities	128,763	118,761	44%	41%
Fixed income	160,900	162,144	55%	59%
Private equities	19	22	<1%	0%
<b>TOTAL</b>	<b>291,085</b>	<b>282,867</b>	<b>100%</b>	<b>100%</b>
PRBP:				
Public equities	254,394	220,145	75%	75%
Fixed income	82,664	70,981	25%	25%
<b>TOTAL</b>	<b>337,058</b>	<b>291,126</b>	<b>100%</b>	<b>100%</b>
<b>TOTAL PLAN ASSETS AT FAIR VALUE</b>	<b>\$ 628,143</b>	<b>\$ 573,993</b>		

## 16. SHC and LPCH Retirement Plans

SHC and LPCH provide retirement benefits through defined benefit and defined contribution retirement plans covering substantially all of its regular employees.

### DEFINED CONTRIBUTION PLAN

The Hospitals offer a defined contribution plan to eligible employees. Employer contributions to the defined contribution retirement plan are based on a percentage of participant annual compensation, participant contributions and years of service. SHC and LPCH contributions under the plan, which are vested immediately to participants, were approximately \$141.2 million and \$124.2 million, and \$55.8 million and \$51.4 million for the years ended August 31, 2021 and 2020, respectively.

### DEFINED BENEFIT PLANS

The Hospitals provide retirement and postretirement medical benefits through the SHC *Staff Pension Plan*, the SHC *Postretirement Medical Benefit Plan*, and the LPCH *Frozen Pension Plan*, collectively (the “Plans”). The obligations for the Plans, net of plan assets, are recorded in the *Consolidated Statements of Financial Position* as “accrued pension and postretirement benefit obligations.” These plans are described in more detail below.

#### Staff Pension Plan

Certain employees of SHC and LPCH are covered by the SHC *Staff Pension Plan* (the “Pension Plan”), a noncontributory, defined benefit pension plan. While the Pension Plan is closed to new participants, certain employees continue to accrue benefits. Benefits are based on years of service and the employee’s compensation. Contributions to the plan are made in accordance with ERISA based on actuarially determined amounts sufficient to meet the benefits to be paid to plan participants. SHC and LPCH have an arrangement whereby SHC assumes the pension liability of the LPCH employees and previously leased employees. However, LPCH is required to reimburse SHC for the annual expense incurred for these employees and previously leased employees.

#### Postretirement Medical Benefit Plan

SHC and LPCH provide health care benefits for certain retired employees through the SHC *Postretirement Medical Benefit Plan* (PRMB). The Hospitals’ employees and their covered dependents may become eligible for the PRMB upon the employee’s retirement as early as age 55, with years of service as defined by specific criteria. Retiree health plans are paid, in part, by retiree contributions, which are adjusted annually. The Hospitals’ subsidies vary depending on whether the retiree is covered under the grandfathered design or the defined dollar benefit design. Medicare supplement options are provided for retirees over age 65. LPCH reimburses SHC for costs related to this plan on a periodic basis.

#### Frozen Pension Plan

Certain other LPCH employees and previously leased employees not covered by the previously described plans are covered by a frozen noncontributory defined benefit pension plan (the “LPCH *Frozen Pension Plan*”). Benefits are based on years of service and the employee’s compensation. Contributions to the plan are based on actuarially determined amounts sufficient to meet the benefits to be paid to plan participants. In November 2020, the LPCH Board of Directors approved a resolution to terminate the LPCH Frozen Pension Plan with a lump sum distribution to be made in November 2021 and an annuity purchase in January 2022.

The change in the Plans' assets, the related change in benefit obligations and the amounts recognized in the financial statements, in thousands of dollars, are as follows:

	STAFF PENSION PLAN	PRMB	LPCH FROZEN PENSION PLAN
<b>2021</b>			
Fair value of plan assets, beginning of year	\$ 210,752	\$ —	\$ 8,319
Change in plan assets:			
Actual return on plan assets	13,438	—	(219)
Employer contributions	—	5,632	—
Plan participants' contributions	—	1,251	—
Benefits and plan expenses paid	(10,824)	(6,883) *	(599)
<b>FAIR VALUE OF PLAN ASSETS, END OF YEAR</b>	<b>213,366</b>	<b>—</b>	<b>7,501</b>
Benefit obligation, beginning of year	219,407	113,212	8,380
Change in projected benefit obligation:			
Service cost	1,083	4,829	—
Interest cost	4,978	2,388	176
Plan participants' contributions	—	1,251	—
Actuarial loss (gain)	(1,508)	1,823	(455)
Benefits and plan expenses paid	(10,824)	(6,883) *	(599)
<b>BENEFIT OBLIGATION, END OF YEAR</b>	<b>213,136</b>	<b>116,620</b>	<b>7,502</b>
<b>NET ASSET (LIABILITY) RECOGNIZED IN THE STATEMENTS OF FINANCIAL POSITION</b>	<b>\$ 230</b>	<b>\$ (116,620)</b>	<b>\$ (1)</b>
* Net of Medicare subsidy of \$106 thousand			
<b>2020</b>			
Fair value of plan assets, beginning of year	\$ 193,642	\$ —	\$ 6,872
Change in plan assets:			
Actual return on plan assets	26,157	—	1,009
Employer contributions	1,917	4,430	1,109
Plan participants' contributions	—	1,284	—
Benefits and plan expenses paid	(10,964)	(5,714) *	(671)
<b>FAIR VALUE OF PLAN ASSETS, END OF YEAR</b>	<b>210,752</b>	<b>—</b>	<b>8,319</b>
Benefit obligation, beginning of year	210,690	101,093	8,291
Change in projected benefit obligation:			
Service cost	1,546	3,829	—
Interest cost	5,907	2,704	222
Plan participants' contributions	—	1,284	—
Actuarial loss	12,228	4,868	538
Benefits and plan expenses paid	(10,964)	(5,714) *	(671)
Plan amendments	—	5,148	—
<b>BENEFIT OBLIGATION, END OF YEAR</b>	<b>219,407</b>	<b>113,212</b>	<b>8,380</b>
<b>NET LIABILITY RECOGNIZED IN THE STATEMENTS OF FINANCIAL POSITION</b>	<b>\$ (8,655)</b>	<b>\$ (113,212)</b>	<b>\$ (61)</b>
* Net of Medicare subsidy of \$125 thousand			

The net liability for the PRMB includes amounts for both SHC and LPCH employees and is recognized on the Hospitals' respective *Statements of Financial Position*. The table below presents the plan obligations for each entity as of August 31, 2021 and 2020, in thousands of dollars:

	2021		2020	
SHC	\$	86,856	\$	84,772
LPCH		29,764		28,440
<b>TOTAL</b>	<b>\$</b>	<b>116,620</b>	<b>\$</b>	<b>113,212</b>

The accumulated benefit obligation for the Pension Plan and LPCH Frozen Pension Plan was \$211.3 million and \$217.6 million, and \$7.5 million and \$8.4 million at August 31, 2021 and 2020, respectively.

Net periodic benefit cost and non-operating activities related to the Plans for the years ended August 31, 2021 and 2020, in thousands of dollars, includes the following components:

	STAFF PENSION PLAN	PRMB	LPCH FROZEN PENSION PLAN
<b>2021</b>			
Service cost	\$ 1,083	\$ 4,829	\$ —
<b>PERIODIC BENEFIT EXPENSE</b>	<b>1,083</b>	<b>4,829</b>	<b>—</b>
Non-operating:			
Interest cost	4,978	2,388	176
Expected return on plan assets	(9,270)	—	(239)
Amortization of:			
Prior service cost	—	2,976	—
Actuarial loss (gain)	2,408	68	112
Non-operating net periodic benefit cost	<b>(1,884)</b>	<b>5,432</b>	<b>49</b>
<b>NET PERIODIC BENEFIT COST<sup>1</sup></b>	<b>(801)</b>	<b>10,261</b>	<b>49</b>
Non-operating net periodic benefit cost	(1,884)	5,432	49
Net actuarial loss (gain)	(5,676)	1,823	3
Amortization of:			
Prior service cost	—	(2,976)	—
Actuarial gain (loss)	(2,408)	(68)	(112)
<b>TOTAL AMOUNTS RECOGNIZED IN NON-OPERATING ACTIVITIES</b>	<b>\$ (9,968)</b>	<b>\$ 4,211</b>	<b>\$ (60)</b>
<b>2020</b>			
Service cost	\$ 1,546	\$ 3,829	\$ —
<b>PERIODIC BENEFIT EXPENSE</b>	<b>1,546</b>	<b>3,829</b>	<b>—</b>
Non-operating:			
Interest cost	5,907	2,704	222
Expected return on plan assets	(9,692)	—	(341)
Amortization of:			
Prior service cost	—	2,560	—
Actuarial loss (gain)	2,277	(251)	119
Non-operating net periodic benefit cost	<b>(1,508)</b>	<b>5,013</b>	<b>—</b>
<b>NET PERIODIC BENEFIT COST<sup>1</sup></b>	<b>38</b>	<b>8,842</b>	<b>—</b>
Non-operating net periodic benefit cost	(1,508)	5,013	—
Net actuarial loss (gain)	(4,237)	4,868	(130)
New prior service cost	—	5,148	—
Amortization of:			
Prior service cost	—	(2,560)	—
Actuarial gain (loss)	(2,277)	251	(119)
<b>TOTAL AMOUNTS RECOGNIZED IN NON-OPERATING ACTIVITIES</b>	<b>\$ (8,022)</b>	<b>\$ 12,720</b>	<b>\$ (249)</b>

<sup>1</sup>The components of net periodic benefit cost other than service cost are included in "pension and other postemployment benefit related changes other than service cost" in the Statement of Activities.

The net periodic benefit cost and amounts recognized in non-operating activities for the PRMB include amounts for both SHC and LPCH employees and is recognized on the Hospitals' respective *Statements of Activities*. The table below presents the amount for each entity as of August 31, 2021 and 2020, in thousands of dollars:

	SHC	LPCH	TOTAL
<b>2021</b>			
Net periodic benefit cost	\$ 7,359	\$ 2,902	\$ 10,261
Amounts recognized in non-operating activities	(1,312)	91	(1,221)
<b>TOTAL AMOUNT RECOGNIZED IN NET PERIODIC BENEFIT COST AND NON-OPERATING ACTIVITIES</b>	<b>\$ 6,047</b>	<b>\$ 2,993</b>	<b>\$ 9,040</b>
<b>2020</b>			
Net periodic benefit cost	\$ 6,325	\$ 2,517	\$ 8,842
Amounts recognized in non-operating activities	5,472	2,235	7,707
<b>TOTAL AMOUNT RECOGNIZED IN NET PERIODIC BENEFIT COST AND NON-OPERATING ACTIVITIES</b>	<b>\$ 11,797</b>	<b>\$ 4,752</b>	<b>\$ 16,549</b>

Cumulative amounts recognized in non-operating activities, but not yet recognized in net periodic benefit cost in the *Consolidated Statements of Activities*, are presented in the following table for the years ended August 31, 2021 and 2020, in thousands of dollars:

	STAFF PENSION PLAN	PRMB	LPCH FROZEN PENSION PLAN
<b>2021</b>			
Prior service cost	\$ —	\$ 17,316	\$ —
Net actuarial loss	50,625	2,861	2,095
<b>ACCUMULATED PLAN BENEFIT COSTS NOT YET RECOGNIZED IN NET PERIODIC BENEFIT COST</b>	<b>\$ 50,625</b>	<b>\$ 20,177</b>	<b>\$ 2,095</b>
<b>2020</b>			
Prior service cost	\$ —	\$ 20,292	\$ —
Net actuarial loss	58,709	1,106	2,204
<b>ACCUMULATED PLAN BENEFIT COSTS NOT YET RECOGNIZED IN NET PERIODIC BENEFIT COST</b>	<b>\$ 58,709</b>	<b>\$ 21,398</b>	<b>\$ 2,204</b>

The prior service cost and net actuarial loss expected to be amortized from non-operating activities to net periodic benefit expense in fiscal year 2022, in thousands of dollars, are as follows:

	STAFF PENSION PLAN	PRMB	LPCH FROZEN PENSION PLAN
Prior service cost	\$ —	\$ 2,415	\$ —
Net actuarial loss	\$ 2,027	\$ 167	\$ 118

## ACTUARIAL ASSUMPTIONS

The weighted average assumptions used to determine the benefit obligations and net periodic benefit cost for the Plans are shown below:

	STAFF PENSION PLAN		PRMB		LPCH FROZEN PENSION PLAN	
	2021	2020	2021	2020	2021	2020
<b>BENEFIT OBLIGATIONS</b>						
Discount rate	2.46%	2.33%	2.39%	2.18%	2.34 %	2.19%
Covered payroll growth rate	3.00%	3.00%	N/A	N/A	N/A	N/A
<b>NET PERIODIC BENEFIT COST</b>						
Discount rate	2.33%	2.88%	2.18%	2.77%	2.19 %	2.80%
Expected return on plan assets	5.00%	5.50%	N/A	N/A	3.00 %	4.50%
Covered payroll growth rate	3.00%	3.00%	N/A	N/A	N/A	N/A

The expected long-term rate of return on asset assumptions for the Pension Plan and LPCH Frozen Pension Plan are 5.00% and 3.00 %, respectively. The assumption is used in determining the expected returns on plan assets, a component of net periodic benefit expense (income), representing the expected return for the upcoming fiscal year on plan assets based on the calculated market-related value of plan assets. This assumption is developed based on future expectations for returns in each asset class, as well as the target asset allocation of the portfolios. The use of expected long-term returns on plan assets may result in income that is greater or less than the actual returns of those plan assets in any given year. Over time, however, the expected long-term returns are designed to approximate the actual long-term returns, and therefore result in a pattern of income and cost recognition that more closely matches the pattern of the services provided by the employees. Differences between actual and expected returns are recognized as a component of non-operating activities and amortized as a component of net periodic benefit expense (income) over the service or life expectancy of the plan participants, depending on the plan, provided such amounts exceed the accounting standards threshold.

To determine the accumulated PRMB obligation at August 31, 2021, a 5.80% for Medical Pre-65 and 7.35% for Medical Post-65 annual rate of increase in the per capita cost of covered health care were assumed for calendar year 2021, declining gradually to 4.00% by 2038 and remaining at this rate thereafter.

Health care cost trend rate assumptions have a significant effect on the amounts reported for the health care plan. If the assumed health care cost trend were increased or decreased by 1%, the impact on PRMB service and interest cost and accumulated obligation are as follows, in thousands of dollars:

	1% INCREASE IN HEALTH CARE COST TREND RATE		1% DECREASE IN HEALTH CARE COST TREND RATE	
Effect on PRMB total service and interest cost	\$	103	\$	(109)
Effect on accumulated PRMB obligation	\$	1,708	\$	(1,707)

## EXPECTED CONTRIBUTIONS

SHC expects to contribute \$5.5 million to the PRMB and does not expect to contribute to the Pension Plan during the fiscal year ending August 31, 2022. LPCH does not expect to contribute to the LPCH Frozen Pension Plan during the fiscal year ending August 31, 2022.



### EXPECTED BENEFIT PAYMENTS

The following benefit payments, which reflect expected future service, are expected to be paid for the fiscal years ending August 31, in thousands of dollars:

YEAR ENDING AUGUST 31	STAFF PENSION PLAN	PRMB		LPCH FROZEN PENSION PLAN
		EXCLUDING MEDICARE SUBSIDY	EXPECTED MEDICARE PART D SUBSIDY	
2022	\$ 11,899	\$ 7,486	\$ 255	\$ 7,567
2023	12,101	7,700	119	—
2024	12,268	7,897	114	—
2025	12,405	8,046	108	—
2026	12,487	8,152	101	—
2027 - 2031	61,043	41,245	399	—

### INVESTMENT STRATEGY

SHC's and LPCH's investment strategies for the Pension Plan and LPCH Frozen Pension Plan is to maximize the total rate of return (income and appreciation) within the limits of prudent risk taking and Section 404 of ERISA. The funds are diversified across asset classes to achieve an optimal balance between risk and return and between income and capital appreciation. Because the liabilities of each of the plans are long-term, the investment horizon is primarily long-term, with adequate liquidity to meet short-term benefit payment obligations.

### CONCENTRATION OF RISK

SHC and LPCH manage a variety of risks, including market, credit, and liquidity risks, across its plan assets. Concentration of risk is defined as an undiversified exposure to one of the above-mentioned risks that increases the exposure of the loss of plan assets unnecessarily. Risk is minimized by diversifying the Hospitals' exposure to such risks across a variety of instruments, markets, and counterparties. As of August 31, 2021, the Hospitals did not have concentrations of risk in any single entity, counterparty, sector, industry or country.

### PLAN ASSETS AND ALLOCATIONS

Current U.S. GAAP defines a hierarchy of valuation inputs for the determination of the fair value of plan assets as described in Note 6. The Plans' assets measured at fair value at August 31, 2021 and 2020, are all categorized as Level 1 investments. The fair value of plan assets by asset category, in thousands of dollars, at August 31, 2021 and 2020 and actual allocations and weighted-average target allocations at August 31, 2021 are as follows:

	2021	2020	2021 ACTUAL ALLOCATION	2021 TARGET ALLOCATION
<b>STAFF PENSION PLAN:</b>				
Cash and cash equivalents	\$ 426	\$ 673	<1%	—%
Public equities	21,335	77,898	10%	10%
Fixed income	191,605	132,181	90%	90%
<b>PLAN ASSETS AT FAIR VALUE</b>	<b>\$ 213,366</b>	<b>\$ 210,752</b>	<b>100%</b>	<b>100%</b>
<b>LPCH FROZEN PENSION PLAN:</b>				
Cash and cash equivalents	\$ 1,376	\$ 33	18%	—%
Fixed income	6,125	8,286	82%	100%
<b>PLAN ASSETS AT FAIR VALUE</b>	<b>\$ 7,501</b>	<b>\$ 8,319</b>	<b>100%</b>	<b>100%</b>

## 17. Leases

### LESSEE

Stanford leases research and development facilities, office spaces, buses, and equipment under operating and finance leases expiring through November 2057. Under the accounting standard for leases, a lease conveys the right to control the use of an identified asset for a period of time in exchange for consideration. On the *Consolidated Statements of Financial Position*, "right-of-use assets" represent Stanford's right to use an underlying asset for the lease term and "lease liabilities" represent Stanford's obligation to make lease payments arising from the lease based on the present value of lease payments over the lease term. Lease liabilities do not include lease payments that were not fixed at commencement or lease modification. The lease terms may include options to extend or terminate the lease when it is reasonably certain that Stanford will exercise that option. The exercise of lease renewal options is at Stanford's sole discretion. Stanford uses an incremental borrowing rate for discounting leases, as applicable. Lease costs are included in other operating expense on the *Consolidated Statements of Activities*.

Supplemental information related to leases, in thousands of dollars, except lease term and discount rate, is as follows:

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>2021</b>					
Operating lease	\$ 451,023	\$ 292,506	\$ 231,215	\$ (146,081)	\$ 828,663
Finance lease	170,768	82	—	—	170,850
<b>TOTAL LEASE RIGHT-OF-USE ASSETS</b>	<b>\$ 621,791</b>	<b>\$ 292,588</b>	<b>\$ 231,215</b>	<b>\$ (146,081)</b>	<b>\$ 999,513</b>
Operating lease	\$ 466,300	\$ 312,210	\$ 241,194	\$ (146,081)	\$ 873,623
Finance lease	173,906	89	—	—	173,995
<b>TOTAL LEASE LIABILITY</b>	<b>\$ 640,206</b>	<b>\$ 312,299</b>	<b>\$ 241,194</b>	<b>\$ (146,081)</b>	<b>\$ 1,047,618</b>

Weighted-average remaining lease term:

Operating lease	22.77 years	5.73 years	8.63 years
Finance lease	22.66 years	1.17 years	N/A

Weighted-average discount rate:

Operating lease	2.24 %	2.02%	2.15 %
Finance lease	2.45 %	1.79%	N/A

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>2020</b>					
Operating lease	\$ 497,437	\$ 341,428	\$ 234,215	\$ (145,532)	\$ 927,548
Finance lease	176,489	152	—	—	176,641
<b>TOTAL LEASE RIGHT-OF-USE ASSETS</b>	<b>\$ 673,926</b>	<b>\$ 341,580</b>	<b>\$ 234,215</b>	<b>\$ (145,532)</b>	<b>\$ 1,104,189</b>
Operating lease	\$ 503,109	\$ 362,955	\$ 239,676	\$ (145,532)	\$ 960,208
Finance lease	180,125	164	—	—	180,289
<b>TOTAL LEASE LIABILITY</b>	<b>\$ 683,234</b>	<b>\$ 363,119</b>	<b>\$ 239,676</b>	<b>\$ (145,532)</b>	<b>\$ 1,140,497</b>

Weighted-average remaining lease term:

Operating lease	21.90 years	5.77 years	9.71 years
Finance lease	23.23 years	2.17 years	N/A

Weighted-average discount rate:

Operating lease	2.47 %	2.08%	2.21%
Finance lease	2.52 %	1.79%	N/A

The components of lease expenses, in thousands of dollars, are as follows:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
Operating lease cost	\$ 73,747	\$ 85,098	\$ 36,578	\$ 195,423
Finance lease cost:				
Amortization of leased assets	10,292	70	—	10,362
Interest on lease liabilities	3,326	2	—	3,328
Variable lease cost	3,392	16,023	6,194	25,609
Short-term lease cost	22,187	11,864	626	34,677
Sublease income	(7,775)	(5,323)	(6,931)	(20,029)
<b>TOTAL LEASE COST</b>	<b>\$ 105,169</b>	<b>\$ 107,734</b>	<b>\$ 36,467</b>	<b>\$ 249,370</b>
<b>2020</b>				
Operating lease cost	\$ 42,396	\$ 79,979	\$ 32,850	\$ 155,225
Finance lease cost:				
Amortization of leased assets	5,672	70	—	5,742
Interest on lease liabilities	1,567	4	—	1,571
Variable lease cost	2,915	17,937	5,779	26,631
Short-term lease cost	30,255	9,048	737	40,040
Sublease income	(16,440)	(5,732)	(3,895)	(26,067)
<b>TOTAL LEASE COST</b>	<b>\$ 66,365</b>	<b>\$ 101,306</b>	<b>\$ 35,471</b>	<b>\$ 203,142</b>

Supplemental cash flow information related to leases, in thousands of dollars, is as follows:

	UNIVERSITY	SHC	LPCH	CONSOLIDATED
<b>2021</b>				
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows from operating leases	\$ 83,463	\$ 86,352	\$ 34,119	\$ 203,934
Operating cash flows from finance leases	3,326	2	—	3,328
Financing cash flows from finance leases	12,038	75	—	12,113
Obtaining right-of-use assets in exchange for a lease liabilities:				
Operating leases	\$ 1,257	\$ 30,858	\$ 30,976	\$ 63,091
Finance leases	3,443	—	—	3,443
<b>2020</b>				
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows from operating leases	\$ 38,891	\$ 82,180	\$ 31,218	\$ 152,289
Operating cash flows from finance leases	1,516	4	—	1,520
Financing cash flows from finance leases	3,807	73	—	3,880
Obtaining right-of-use assets in exchange for a lease liabilities:				
Operating leases	\$ 65,236	\$ 96,491	\$ 124,323	\$ 286,050
Finance leases	160,966	—	—	160,966

Maturities of lease liabilities for periods subsequent to August 31, 2021, in thousands of dollars, are as follows:

YEAR ENDING AUGUST 31	MATURITY OF LEASE LIABILITIES					CONSOLIDATED
	UNIVERSITY	SHC	LPCH	ELIMINATIONS		
2022	\$ 64,515	\$ 84,670	\$ 35,180	\$ (18,097)	\$	166,268
2023	47,681	78,051	34,187	(18,493)		141,426
2024	45,139	53,571	30,931	(18,917)		110,724
2025	43,667	33,517	27,153	(18,329)		86,008
2026	42,664	24,607	25,560	(17,466)		75,365
Thereafter	671,271	56,847	112,772	(75,404)		765,486
<b>TOTAL LEASE PAYMENTS</b>	<b>914,937</b>	<b>331,263</b>	<b>265,783</b>	<b>(166,706)</b>		<b>1,345,277</b>
<b>LESS IMPUTED INTEREST</b>	<b>(274,731)</b>	<b>(18,964)</b>	<b>(24,589)</b>	<b>20,625</b>		<b>(297,659)</b>
<b>TOTAL</b>	<b>\$ 640,206</b>	<b>\$ 312,299</b>	<b>\$ 241,194</b>	<b>\$ (146,081)</b>	<b>\$</b>	<b>1,047,618</b>

## LESSOR

Stanford holds investment properties that it leases to external parties under non-cancellable operating leases. Stanford receives minimum rental income over the life of the lease; however, certain of the leases include variable rental payments that are based on a percentage of the tenant sales in excess of contractual amount. Certain leases include options for lessee to extend or terminate the lease. The residual value from the underlying asset following the end of the lease term is based on independent appraisals and internal models that are based on discounted cash flows and market data, if available.

Total rental income under these leases for the year ended August 31, 2021 and 2020 was \$183.5 million and \$182.5 million for the University, \$5.3 million and \$5.7 million for SHC, and \$1.6 million and \$1.4 million for LPCH, respectively.

## 18. Related Party Transactions

Members of the University, SHC, and LPCH boards and senior management may, from time to time, be associated, either directly or indirectly, with companies doing business with Stanford.

The University, SHC and LPCH have separate written conflict of interest policies that require, among other items, that no member of their respective board can participate in any decision in which he or she (or an immediate family member) has a material financial interest. Each board member is required to certify compliance with his or her respective entity's conflict of interest policy on an annual basis and indicate whether his or her respective entity does business with any entity in which the board member has a material financial interest. When such relationships exist, measures are taken to mitigate any actual or perceived conflict, including requiring that such transactions be conducted at arm's length, for good and sufficient consideration, based on terms that are fair and reasonable to and for the benefit of the respective entity, and in accordance with applicable conflict of interest laws and policies. No such associations are considered to be significant.

The University, SHC, and LPCH each requires its senior management to disclose annually any significant financial interests in, or employment or consulting relationships with, entities doing business with it. These annual disclosures cover both senior management and their immediate family members. When such relationships exist, measures are taken to appropriately manage the actual or perceived conflict in the best interests of the relevant entity. No such associations are considered to be significant.

## 19. Commitments and Contingencies

Management is of the opinion that none of the following commitments and contingencies will have a material adverse effect on Stanford's consolidated financial position.

### SPONSORED SUPPORT

As described in *Note 1*, costs recovered by the University as sponsored support are subject to audit and adjustment. Fringe benefit costs for the fiscal years ended August 31, 2016 to 2021 are subject to audit. The University does not anticipate any material adjustments to the *Consolidated Financial Statements*.

### HEALTH CARE

As described in *Note 12*, cost reports filed under the Medicare program for services based upon cost reimbursement are subject to audit. The estimated amounts due to or from the program are reviewed and adjusted annually based upon the status of such audits and subsequent appeals.

The health care industry is subject to numerous laws and regulations of federal, state and local governments. Compliance with these laws and regulations can be subject to future government review and interpretation, as well as to regulatory actions unknown or unasserted at this time. Government activity with respect to investigations and allegations concerning possible violations of regulations by health care providers could result in the imposition of significant fines and penalties, as well as significant repayments for patient services previously billed. SHC and LPCH are subject to similar regulatory reviews, and while such reviews may result in repayments and civil remedies that could have a material effect on their respective financial results of operations in a given period, SHC's and LPCH's management believes that such repayments and civil remedies would not have a material effect on the financial position of SHC and LPCH, respectively.

### INFORMATION PRIVACY AND SECURITY

As with many medical centers and universities across the country, information privacy and security is a significant enterprise risk area, owing to persistent and pervasive cyber threats along with expanding regulatory compliance obligations and enforcement. The University, SHC and LPCH have programs in place to safeguard important systems and protected information, yet significant incidents have occurred in the past and may occur in the future involving potential or actual disclosure of such information (including, for example, personally identifiable information relating to employees, students, patients or research participants). In most cases, there has been no evidence of unauthorized access to, or use/disclosure of, such information, yet privacy laws may require reporting to potentially affected individuals as well as federal, state and international governmental agencies. Governmental agencies have the authority to investigate and request further information about an incident or safeguards, to cite the University, SHC or LPCH for a deficiency or regulatory violation, and/or require payment of fines, corrective action, or both. California law also allows a private right to sue for a breach of medical information. To date, the cost of such possible consequences has not been material to the University, SHC or LPCH, and management does not believe that any future consequences of these identified incidents will be material to the *Consolidated Financial Statements*.

### LABOR AGREEMENTS

Approximately 7% of the University's, 31% of SHC's and 44 % of LPCH's employees are covered under union contract arrangements and are, therefore, subject to labor stoppages when contracts expire. The University's agreement with the Service Employees International Union (SEIU) will expire in 2024. The University's agreement with the Stanford Deputy Sheriffs' Association expired July 2021 and negotiations are currently underway for a successor agreement. SHC's and LPCH's agreements with SEIU and the Committee for Recognition of Nursing Achievement (CRONA) will expire in 2023 and 2022, respectively.

### GUARANTEES AND INDEMNIFICATIONS

Stanford enters into indemnification agreements with third parties in the normal course of business. The impact of these agreements, individually or in the aggregate, is not expected to be material to the *Consolidated Financial Statements*. As a result, no liabilities related to guarantees and indemnifications have been recorded at August 31, 2021.

## LITIGATION

The University, SHC and LPCH are defendants in a number of legal actions. While the final outcome cannot be determined at this time, management is of the opinion that the liability, if any, resulting from these legal actions will not have a material adverse effect on the consolidated financial position.

## CONTRACTUAL COMMITMENTS

At August 31, 2021, the University had contractual obligations of approximately \$228.9 million in connection with major construction projects. Remaining expenditures on construction in progress are estimated to be \$583.0 million, which will be financed with certain unexpended plant funds, gifts and debt. Commitments on construction contracts, including the construction and remodeling of Hospital facilities, were approximately \$253.2 million for SHC and \$33.4 million for LPCH at August 31, 2021.

The University executed two 25-year agreements with two solar electricity developers and operators in 2015 and 2018 to purchase the output from their solar photovoltaic facilities and battery storage. The first facility was placed in service in December 2016 and the second facility is expected to be placed in service in June 2022. The minimum energy purchase requirements are expected to be well within the University's current consumption. The University's total payment under the agreements over the life of the agreements, undiscounted, is \$327.1 million.

In addition, as described in *Note 6*, the University is obligated under certain alternative investment agreements to advance additional funding up to specified levels over a period of years.

## COVID-19

The COVID-19 pandemic has caused disruptions to our nation's higher education and healthcare systems, including Stanford. While the conditions have improved since the peak surge in early 2020, the national outlook worsened towards the end of the fiscal year 2021 with the spike in cases caused by the Delta variant of the COVID-19 virus. Adversely impacted areas include, but are not limited to, student enrollment and housing and dining revenues.

Patient volumes and the related revenues for most of SHC's and LPCH's health care services were significantly impacted in fiscal year 2020 as various policies were implemented by federal, state, and local governments in response to the COVID-19 pandemic, including restrictions on nonessential medical services, travel bans, social distancing, and shelter-in-place orders. These policies required the Hospitals to reduce hours and temporarily close certain operations, as well as significantly reduce surgical procedures, outpatient diagnostic and treatment services, and physician patient visits. More than a year into the COVID-19 pandemic, certain volumes were still impacted.

On March 27, 2020 the Federal Government passed the Coronavirus Aid, Relief, and Economic Stimulus Act (CARES Act) which made funds available to Stanford through various provisions of the legislation. For the years ended August 31, 2021 and 2020, SHC received CARES Act provider relief funding of \$392.8 million and \$122.8 million, respectively and LPCH received \$6.7 million and \$79.0 million, respectively, reported as "special program fees and other income" on the *Consolidated Statements of Activities*.

Stanford recognized revenue related to the CARES Act Provider Relief Fund based on information contained in laws and regulations, as well as interpretations issued by the Department of Health and Human Services ("HHS"), governing the funding that was publicly available at August 31, 2021 and August 31, 2020. CARES Act provider relief funding is subject to future audit adjustments based on compliance audits and potential changes to statutes. In addition, HHS issued new reporting requirements for the CARES Act provider relief funding. The most recent requirements were issued in June 2021, and the new requirements expanded Provider Relief Fund eligibility and updated reporting requirements. Due to these new reporting requirements and the ongoing changes in the compliance requirements, there is at least a reasonable possibility that amounts recorded under CARES Act Provider Relief Fund may change in future periods.

Furthermore, the CARES Act provides for deferred payment of the employer portion of social security taxes between March 27, 2020 and December 31, 2020, with 50% of the deferred amount due December 31, 2021 and the remaining 50% due December 31, 2022. As of August 31, 2021, the University, SHC, and LPCH deferred payments of \$87.8 million, \$56.0 million, and \$24.8 million, respectively. As of August 31, 2020, the University, SHC, and LPCH deferred payments of \$56.0 million, \$46.3 million, and \$16.1 million, respectively, and these amounts are reported as "accounts payable and accrued expenses" on the *Consolidated Statements of Financial Position*.

Under the CARES Act, SHC also received \$397.0 million in advanced payments from the Centers for Medicare & Medicaid Services (CMS) in fiscal year 2020 which is on the *Consolidated Statements of Financial Position* as of August 31, 2020. CMS had indicated that it would begin recouping these advance payments against future Medicare claims for services that are provided during the recoupment period. By August 31, 2021, \$397.0 million in advance payments were recouped by CMS.

Stanford is monitoring legislative developments, including future relief funding opportunities, and directives from federal, state, and local officials to determine additional precautions and procedures that may need to be implemented.

## 20. Subsequent Events

Stanford has evaluated subsequent events for the period from August 31, 2021 through December 1, 2021, the date the *Consolidated Financial Statements* were issued.

## 21. Consolidating Entity Statements

The pages which follow present consolidating statements of financial position as of August 31, 2021 and 2020, and consolidating statements of activities and cash flows for the years then ended, in thousands of dollars.

### CONSOLIDATING STATEMENTS OF FINANCIAL POSITION

*At August 31, 2021 (in thousands of dollars)*

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>ASSETS</b>					
Cash and cash equivalents	\$ 874,943	\$ 407,044	\$ 398,194	\$ (7,392)	\$ 1,672,789
Assets limited as to use	453,452	—	—	—	453,452
Accounts receivable, net	241,706	894,521	617,783	—	1,754,010
Receivables (payables) from SHC and LPCH, net	42,841	—	—	(42,841)	—
Prepaid expenses and other assets	91,075	420,219	122,790	(123,594)	510,490
Pledges receivable, net	1,550,314	48,860	153,096	(51,745)	1,700,525
Student loans receivable, net	42,699	—	—	—	42,699
Faculty and staff mortgages and other loans receivable, net	892,098	—	—	—	892,098
Investments at fair value	48,001,081	4,662,740	1,368,332	7,392	54,039,545
Right-of-use assets	621,791	292,588	231,215	(146,081)	999,513
Plant facilities, net of accumulated depreciation	7,683,172	3,619,451	1,776,007	—	13,078,630
Works of art and special collections	—	—	—	—	—
<b>TOTAL ASSETS</b>	<b>\$ 60,495,172</b>	<b>\$ 10,345,423</b>	<b>\$ 4,667,417</b>	<b>\$ (364,261)</b>	<b>\$ 75,143,751</b>
<b>LIABILITIES AND NET ASSETS</b>					
<b>LIABILITIES:</b>					
Accounts payable and accrued expenses	\$ 969,304	\$ 1,538,150	\$ 380,416	\$ (97,965)	\$ 2,789,905
Liabilities associated with investments	974,756	—	—	—	974,756
Lease liabilities	640,206	312,299	241,194	(146,081)	1,047,618
Deferred income and other obligations	1,620,905	245,077	122,135	—	1,988,117
Accrued pension and postretirement benefit obligations	513,460	86,626	29,765	—	629,851
Notes and bonds payable	5,143,849	2,318,780	839,961	—	8,302,590
U.S. government refundable loan funds	16,456	—	—	—	16,456
<b>TOTAL LIABILITIES</b>	<b>9,878,936</b>	<b>4,500,932</b>	<b>1,613,471</b>	<b>(244,046)</b>	<b>15,749,293</b>
<b>NET ASSETS:</b>					
Without donor restrictions, including non-controlling interest attributable to SHC of \$120,215	27,502,213	5,693,158	2,377,168	(120,215)	35,452,324
With donor restrictions	23,114,023	151,333	676,778	—	23,942,134
<b>TOTAL NET ASSETS</b>	<b>50,616,236</b>	<b>5,844,491</b>	<b>3,053,946</b>	<b>(120,215)</b>	<b>59,394,458</b>
<b>TOTAL LIABILITIES AND NET ASSETS</b>	<b>\$ 60,495,172</b>	<b>\$ 10,345,423</b>	<b>\$ 4,667,417</b>	<b>\$ (364,261)</b>	<b>\$ 75,143,751</b>



**CONSOLIDATING STATEMENTS OF FINANCIAL POSITION**

*At August 31, 2020 (in thousands of dollars)*

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>ASSETS</b>					
Cash and cash equivalents	\$ 1,153,303	\$ 1,642,912	\$ 354,157	\$ (7,391)	\$ 3,142,981
Assets limited as to use	253,391	92	—	—	253,483
Accounts receivable, net	233,644	793,135	513,297	—	1,540,076
Receivables (payables) from SHC and LPCH, net	12,282	—	—	(12,282)	—
Prepaid expenses and other assets	101,999	388,725	93,576	(104,646)	479,654
Pledges receivable, net	1,369,417	47,396	109,446	(53,793)	1,472,466
Student loans receivable, net	46,089	—	—	—	46,089
Faculty and staff mortgages and other loans receivable, net	829,262	—	—	—	829,262
Investments at fair value	37,574,583	2,299,847	1,047,419	7,391	40,929,240
Right of use assets	673,926	341,580	234,215	(145,532)	1,104,189
Plant facilities, net of accumulated depreciation	7,685,710	3,646,012	1,840,898	—	13,172,620
Works of art and special collections	—	—	—	—	—
<b>TOTAL ASSETS</b>	<b>\$ 49,933,606</b>	<b>\$ 9,159,699</b>	<b>\$ 4,193,008</b>	<b>\$ (316,253)</b>	<b>\$ 62,970,060</b>
<b>LIABILITIES AND NET ASSETS</b>					
<b>LIABILITIES:</b>					
Accounts payable and accrued expenses	\$ 931,274	\$ 1,864,051	\$ 333,378	\$ (69,562)	\$ 3,059,141
Liabilities associated with investments	1,002,896	—	—	—	1,002,896
Lease liabilities	683,234	363,119	239,676	(145,532)	1,140,497
Deferred income and other obligations	1,386,649	170,746	69,054	—	1,626,449
Accrued pension and postretirement benefit obligations	597,951	93,427	28,501	—	719,879
Notes and bonds payable	5,003,552	2,340,908	881,211	—	8,225,671
U.S. government refundable loan funds	22,668	—	—	—	22,668
<b>TOTAL LIABILITIES</b>	<b>9,628,224</b>	<b>4,832,251</b>	<b>1,551,820</b>	<b>(215,094)</b>	<b>15,797,201</b>
<b>NET ASSETS:</b>					
Without donor restrictions, including non-controlling interest attributable to SHC of \$101,159	22,685,294	4,193,905	2,128,735	(101,159)	28,906,775
With donor restrictions	17,620,088	133,543	512,453	—	18,266,084
<b>TOTAL NET ASSETS</b>	<b>40,305,382</b>	<b>4,327,448</b>	<b>2,641,188</b>	<b>(101,159)</b>	<b>47,172,859</b>
<b>TOTAL LIABILITIES AND NET ASSETS</b>	<b>\$ 49,933,606</b>	<b>\$ 9,159,699</b>	<b>\$ 4,193,008</b>	<b>\$ (316,253)</b>	<b>\$ 62,970,060</b>

## CONSOLIDATING STATEMENTS OF ACTIVITIES

For the year ended August 31, 2021 (in thousands of dollars)

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS</b>					
<b>OPERATING REVENUES:</b>					
<b>TOTAL STUDENT INCOME, NET</b>	<b>\$ 507,923</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ 507,923</b>
Sponsored support:					
Direct costs - University	893,874	6,761	—	—	900,635
Direct costs - SLAC National Accelerator Laboratory	489,872	—	—	—	489,872
Indirect costs	297,514	—	—	—	297,514
<b>TOTAL SPONSORED SUPPORT</b>	<b>1,681,260</b>	<b>6,761</b>	<b>—</b>	<b>—</b>	<b>1,688,021</b>
Health care services:					
Net patient service revenue	—	6,052,048	2,138,716	(41,296)	8,149,468
Premium revenue	—	118,741	—	—	118,741
Physicians' services and support - SHC and LPCH, net	1,334,418	—	—	(1,334,418)	—
Physicians' services and support - other facilities, net	44,601	—	—	(11,254)	33,347
<b>TOTAL HEALTH CARE SERVICES</b>	<b>1,379,019</b>	<b>6,170,789</b>	<b>2,138,716</b>	<b>(1,386,968)</b>	<b>8,301,556</b>
<b>TOTAL CURRENT YEAR GIFTS IN SUPPORT OF OPERATIONS</b>	<b>288,110</b>	<b>204</b>	<b>5,401</b>	<b>—</b>	<b>293,715</b>
Net assets released from restrictions:					
Payments received on pledges	244,646	1,227	—	—	245,873
Prior year gifts released from donor restrictions	85,281	8,964	5,107	—	99,352
<b>TOTAL NET ASSETS RELEASED FROM RESTRICTIONS</b>	<b>329,927</b>	<b>10,191</b>	<b>5,107</b>	<b>—</b>	<b>345,225</b>
Investment income distributed for operations:					
Endowment	1,330,153	492	18,799	—	1,349,444
Expendable funds pools and other investment income	401,235	603	—	—	401,838
<b>TOTAL INVESTMENT INCOME DISTRIBUTED FOR OPERATIONS</b>	<b>1,731,388</b>	<b>1,095</b>	<b>18,799</b>	<b>—</b>	<b>1,751,282</b>
<b>TOTAL SPECIAL PROGRAM FEES AND OTHER INCOME</b>	<b>386,138</b>	<b>583,168</b>	<b>91,195</b>	<b>(9,209)</b>	<b>1,051,292</b>
<b>TOTAL OPERATING REVENUES</b>	<b>6,303,765</b>	<b>6,772,208</b>	<b>2,259,218</b>	<b>(1,396,177)</b>	<b>13,939,014</b>
<b>OPERATING EXPENSES:</b>					
Salaries and benefits	4,041,029	2,813,222	1,023,210	—	7,877,461
Depreciation	470,184	287,150	109,341	—	866,675
Other operating expenses	1,689,090	3,008,492	1,048,027	(1,396,177)	4,349,432
<b>TOTAL OPERATING EXPENSES</b>	<b>6,200,303</b>	<b>6,108,864</b>	<b>2,180,578</b>	<b>(1,396,177)</b>	<b>13,093,568</b>
<b>CHANGE IN NET ASSETS FROM OPERATING ACTIVITIES</b>	<b>\$ 103,462</b>	<b>\$ 663,344</b>	<b>\$ 78,640</b>	<b>\$ —</b>	<b>\$ 845,446</b>

**CONSOLIDATING STATEMENTS OF ACTIVITIES, Continued**

*For the year ended August 31, 2021 (in thousands of dollars)*

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS (continued)</b>					
<b>CHANGE IN NET ASSETS FROM OPERATING ACTIVITIES</b>	<b>\$ 103,462</b>	<b>\$ 663,344</b>	<b>\$ 78,640</b>	<b>\$ —</b>	<b>\$ 845,446</b>
NON-OPERATING ACTIVITIES:					
Increase in reinvested gains	4,468,169	871,876	208,623	—	5,548,668
Donor advised funds, net	3,395	—	—	—	3,395
Current year gifts not included in operations	408	—	—	—	408
Equity and fund transfers, net	150,027	(101,957)	(48,070)	—	—
Capital and other gifts released from restrictions	42,188	19,240	10,270	—	71,698
Pension and other postemployment benefit related changes other than service cost	101,474	7,436	(1,731)	—	107,179
Transfer to net assets with donor restrictions, net	(75,080)	—	—	—	(75,080)
Swap interest and change in value of swap agreements	7,077	46,274	—	—	53,351
Loss on extinguishment of debt	—	(2,558)	—	—	(2,558)
Non-controlling interest attributable to SHC	19,056	—	—	(19,056)	—
Other	(3,257)	(4,402)	701	—	(6,958)
<b>NET CHANGE IN NET ASSETS WITHOUT DONOR RESTRICTIONS</b>	<b>4,816,919</b>	<b>1,499,253</b>	<b>248,433</b>	<b>(19,056)</b>	<b>6,545,549</b>
<b>NET ASSETS WITH DONOR RESTRICTIONS</b>					
Gifts and pledges, net	998,134	34,860	71,083	—	1,104,077
Increase in reinvested gains	4,676,143	12,307	129,446	—	4,817,896
Change in value of split-interest agreements, net	119,227	—	3,326	—	122,553
Net assets released to operations	(329,927)	(11,490)	(29,307)	—	(370,724)
Capital and other gifts released to net assets without donor restrictions	(42,188)	(19,240)	(10,270)	—	(71,698)
Gift transfers, net	(3,050)	3,030	20	—	—
Transfer from net assets without donor restrictions, net	75,080	—	—	—	75,080
Other	516	(1,677)	27	—	(1,134)
<b>NET CHANGE IN NET ASSETS WITH DONOR RESTRICTIONS</b>	<b>5,493,935</b>	<b>17,790</b>	<b>164,325</b>	<b>—</b>	<b>5,676,050</b>
<b>NET CHANGE IN TOTAL NET ASSETS</b>	<b>10,310,854</b>	<b>1,517,043</b>	<b>412,758</b>	<b>(19,056)</b>	<b>12,221,599</b>
Total net assets, beginning of year	40,305,382	4,327,448	2,641,188	(101,159)	47,172,859
<b>TOTAL NET ASSETS, END OF YEAR</b>	<b>\$ 50,616,236</b>	<b>\$ 5,844,491</b>	<b>\$ 3,053,946</b>	<b>\$ (120,215)</b>	<b>\$ 59,394,458</b>

## CONSOLIDATING STATEMENTS OF ACTIVITIES

For the year ended August 31, 2020 (in thousands of dollars)

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS</b>					
<b>OPERATING REVENUES:</b>					
<b>TOTAL STUDENT INCOME, NET</b>	<b>\$ 610,172</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ 610,172</b>
Sponsored support:					
Direct costs - University	858,422	—	—	—	858,422
Direct costs - SLAC National Accelerator Laboratory	484,823	—	—	—	484,823
Indirect costs	278,635	—	—	—	278,635
<b>TOTAL SPONSORED SUPPORT</b>	<b>1,621,880</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>1,621,880</b>
Health care services:					
Net patient service revenue	—	5,140,938	1,883,862	(38,207)	6,986,593
Premium revenue	—	116,971	—	—	116,971
Physicians' services and support - SHC and LPCH, net	1,235,774	—	—	(1,235,774)	—
Physicians' services and support - other facilities, net	42,872	—	—	(9,848)	33,024
<b>TOTAL HEALTH CARE SERVICES</b>	<b>1,278,646</b>	<b>5,257,909</b>	<b>1,883,862</b>	<b>(1,283,829)</b>	<b>7,136,588</b>
<b>TOTAL CURRENT YEAR GIFTS IN SUPPORT OF OPERATIONS</b>	<b>289,908</b>	<b>1,703</b>	<b>4,115</b>	<b>—</b>	<b>295,726</b>
Net assets released from restrictions:					
Payments received on pledges	184,442	2,591	—	—	187,033
Prior year gifts released from donor restrictions	59,481	4,996	5,828	—	70,305
<b>TOTAL NET ASSETS RELEASED FROM RESTRICTIONS</b>	<b>243,923</b>	<b>7,587</b>	<b>5,828</b>	<b>—</b>	<b>257,338</b>
Investment income distributed for operations:					
Endowment	1,355,058	519	17,390	—	1,372,967
Expendable funds pools and other investment income	287,136	1,014	—	—	288,150
<b>TOTAL INVESTMENT INCOME DISTRIBUTED FOR OPERATIONS</b>	<b>1,642,194</b>	<b>1,533</b>	<b>17,390</b>	<b>—</b>	<b>1,661,117</b>
<b>TOTAL SPECIAL PROGRAM FEES AND OTHER INCOME</b>	<b>420,363</b>	<b>298,844</b>	<b>153,389</b>	<b>—</b>	<b>872,596</b>
<b>TOTAL OPERATING REVENUES</b>	<b>6,107,086</b>	<b>5,567,576</b>	<b>2,064,584</b>	<b>(1,283,829)</b>	<b>12,455,417</b>
<b>OPERATING EXPENSES:</b>					
Salaries and benefits	3,962,140	2,548,259	935,330	—	7,445,729
Depreciation	437,194	255,079	121,130	—	813,403
Other operating expenses	1,666,591	2,743,194	962,999	(1,283,829)	4,088,955
<b>TOTAL OPERATING EXPENSES</b>	<b>6,065,925</b>	<b>5,546,532</b>	<b>2,019,459</b>	<b>(1,283,829)</b>	<b>12,348,087</b>
<b>CHANGE IN NET ASSETS FROM OPERATING ACTIVITIES</b>	<b>\$ 41,161</b>	<b>\$ 21,044</b>	<b>\$ 45,125</b>	<b>\$ —</b>	<b>\$ 107,330</b>

**CONSOLIDATING STATEMENTS OF ACTIVITIES, Continued***For the year ended August 31, 2020 (in thousands of dollars)*

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS (continued)</b>					
<b>CHANGE IN NET ASSETS FROM OPERATING ACTIVITIES</b>	<b>\$ 41,161</b>	<b>\$ 21,044</b>	<b>\$ 45,125</b>	<b>\$ —</b>	<b>\$ 107,330</b>
NON-OPERATING ACTIVITIES:					
Increase in reinvested gains	516,024	224,036	52,070	—	792,130
Donor advised funds, net	61,723	—	—	—	61,723
Current year gifts not included in operations	2,026	—	—	—	2,026
Equity and fund transfers, net	135,339	(98,745)	(36,594)	—	—
Capital and other gifts released from restrictions	296,492	558,467	123,907	—	978,866
Pension and other postemployment benefit related changes other than net periodic benefit expense	96,287	(1,028)	(3,467)	—	91,792
Transfer to net assets with donor restrictions, net	(128,935)	—	—	—	(128,935)
Swap interest and change in value of swap agreements	(8,314)	(53,722)	—	—	(62,036)
Non-controlling interest attributable to SHC	20,847	—	—	(20,847)	—
Other	(411)	(2,022)	621	—	(1,812)
<b>NET CHANGE IN NET ASSETS WITHOUT DONOR RESTRICTIONS</b>	<b>1,032,239</b>	<b>648,030</b>	<b>181,662</b>	<b>(20,847)</b>	<b>1,841,084</b>
<b>NET ASSETS WITH DONOR RESTRICTIONS</b>					
Gifts and pledges, net	684,985	22,084	32,172	—	739,241
Increase in reinvested gains	484,730	3,814	30,879	—	519,423
Change in value of split-interest agreements, net	14,414	—	1,879	—	16,293
Net assets released to operations	(243,923)	(10,823)	(27,333)	—	(282,079)
Capital and other gifts released to net assets without donor restrictions	(296,492)	(558,467)	(123,907)	—	(978,866)
Gift transfers, net	(334)	314	20	—	—
Transfer from net assets without donor restrictions, net	128,935	—	—	—	128,935
Other	189	(152)	(175)	—	(138)
<b>NET CHANGE IN NET ASSETS WITH DONOR RESTRICTIONS</b>	<b>772,504</b>	<b>(543,230)</b>	<b>(86,465)</b>	<b>—</b>	<b>142,809</b>
<b>NET CHANGE IN TOTAL NET ASSETS</b>	<b>1,804,743</b>	<b>104,800</b>	<b>95,197</b>	<b>(20,847)</b>	<b>1,983,893</b>
Total net assets, beginning of year	38,500,639	4,222,648	2,545,991	(80,312)	45,188,966
<b>TOTAL NET ASSETS, END OF YEAR</b>	<b>\$ 40,305,382</b>	<b>\$ 4,327,448</b>	<b>\$ 2,641,188</b>	<b>\$ (101,159)</b>	<b>\$ 47,172,859</b>

## CONSOLIDATING STATEMENTS OF CASH FLOWS

For the year ended August 31, 2021 (in thousands of dollars)

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>					
Change in net assets	\$ 10,310,854	\$ 1,517,043	\$ 412,758	\$ (19,056)	\$ 12,221,599
Adjustments to reconcile change in net assets to net cash provided by (used for) operating activities:					
Depreciation	470,184	287,150	109,341	—	866,675
Amortization of bond premiums, discounts and other	30,455	(8,271)	(2,615)	—	19,569
Net gains on investments	(11,093,768)	(812,347)	(324,599)	—	(12,230,714)
Change in fair value of interest rate swaps	(10,557)	(67,638)	—	—	(78,195)
Change in split-interest agreements	158,814	—	—	—	158,814
Change in deferred tax asset and liability	129,127	—	—	—	129,127
Investment income for restricted purposes	(8,763)	(34)	107,895	—	99,098
Gifts restricted for long-term investments	(645,872)	(25,161)	(192,398)	—	(863,431)
Equity and fund transfers, net	(146,977)	98,927	48,050	—	—
Gifts of securities and properties	(30,509)	—	—	—	(30,509)
Other	36,280	2,558	(5,098)	—	33,740
Premiums received from bond issuance	79,544	17,287	—	—	96,831
Changes in operating assets and liabilities:					
Accounts receivable	19,548	(160,066)	(104,486)	—	(245,004)
Pledges receivable, net	(3,294)	(1,464)	(10,540)	—	(15,298)
Prepaid expenses and other assets	(3,969)	(40,735)	(18,352)	—	(63,056)
Accounts payable and accrued expenses	75,280	(215,280)	41,104	—	(98,896)
Accrued pension and postretirement benefit obligations	(84,491)	(6,801)	1,264	—	(90,028)
Lease liabilities	(38,773)	(1,822)	2,348	—	(38,247)
Deferred income and other obligations	131,961	74,331	53,081	—	259,373
<b>NET CASH PROVIDED BY (USED FOR) OPERATING ACTIVITIES</b>	<b>(624,926)</b>	<b>657,677</b>	<b>117,753</b>	<b>(19,056)</b>	<b>131,448</b>
<b>CASH FLOW FROM INVESTING ACTIVITIES</b>					
Additions to plant facilities, net	(493,332)	(262,522)	(35,005)	—	(790,859)
Student, faculty and other loans:					
New loans made	(178,342)	—	—	—	(178,342)
Principal collected	105,835	—	—	—	105,835
Purchases of investments	(18,702,507)	(1,605,006)	(28,195)	19,055	(20,316,653)
Sales and maturities of investments	18,318,948	44,129	24,777	—	18,387,854
Change associated with short term investments	437,983	—	—	—	437,983
Swap settlement payments, net	—	(21,420)	—	—	(21,420)
<b>NET CASH PROVIDED BY (USED FOR) INVESTING ACTIVITIES</b>	<b>(511,415)</b>	<b>(1,844,819)</b>	<b>(38,423)</b>	<b>19,055</b>	<b>(2,375,602)</b>
<b>CASH FLOW FROM FINANCING ACTIVITIES</b>					
Gifts and reinvested income for restricted purposes	472,287	25,164	51,392	—	548,843
Equity and fund transfers from Hospitals	88,266	(40,216)	(48,050)	—	—
Proceeds from borrowing	504,656	522,815	—	—	1,027,471
Repayment of notes and bonds payable	(421,637)	(552,615)	(38,635)	—	(1,012,887)
Bond issuance costs and interest rate swaps	(1,446)	(3,966)	—	—	(5,412)
Contributions received for split-interest agreements	19,709	—	—	—	19,709
Payments made under split-interest agreements	(51,186)	—	—	—	(51,186)
Securities lending collateral received, net	9,393	—	—	—	9,393
Other	(4,907)	—	—	—	(4,907)
<b>NET CASH PROVIDED BY (USED FOR) FINANCING ACTIVITIES</b>	<b>615,135</b>	<b>(48,818)</b>	<b>(35,293)</b>	<b>—</b>	<b>531,024</b>
<b>INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<b>(521,206)</b>	<b>(1,235,960)</b>	<b>44,037</b>	<b>(1)</b>	<b>(1,713,130)</b>
Cash and cash equivalents, beginning of year	1,589,085	1,643,004	354,157	(7,391)	3,578,855
<b>CASH AND CASH EQUIVALENTS, END OF YEAR</b>	<b>\$ 1,067,879</b>	<b>\$ 407,044</b>	<b>\$ 398,194</b>	<b>\$ (7,392)</b>	<b>\$ 1,865,725</b>
<b>SUPPLEMENTAL DATA:</b>					
Cash and cash equivalents as shown in the <i>Statements of Financial Position</i>	\$ 874,943	\$ 407,044	\$ 398,194	\$ (7,392)	\$ 1,672,789
Restricted cash included in assets limited as to use	117,179	—	—	—	117,179
Restricted cash included in other assets	28,432	—	—	—	28,432
Cash and restricted cash included in investments	47,325	—	—	—	47,325
<b>TOTAL CASH AND CASH EQUIVALENTS AS SHOWN ON THE STATEMENTS OF CASH FLOWS</b>	<b>\$ 1,067,879</b>	<b>\$ 407,044</b>	<b>\$ 398,194</b>	<b>\$ (7,392)</b>	<b>\$ 1,865,725</b>
Interest paid, net of capitalized interest	\$ 177,937	\$ 81,580	\$ 34,644	\$ —	\$ 294,161
Change in payables for plant facilities	\$ (27,359)	\$ (1,636)	\$ 1,087	\$ —	\$ (27,908)
Right-of-use assets obtained in exchange for lease liabilities	\$ 4,700	\$ 30,858	\$ 30,976	\$ —	\$ 66,534

## CONSOLIDATING STATEMENTS OF CASH FLOWS

For the year ended August 31, 2020 (in thousands of dollars)

	UNIVERSITY	SHC	LPCH	ELIMINATIONS	CONSOLIDATED
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>					
Change in net assets	\$ 1,804,743	\$ 104,800	\$ 95,197	\$ (20,847)	\$ 1,983,893
Adjustments to reconcile change in net assets to net cash provided by (used for) operating activities:					
Depreciation	437,194	255,079	121,130	—	813,403
Amortization of bond premiums, discounts and other	12,913	(460)	(2,639)	—	9,814
Gains on disposal of plant facilities	654	—	327	—	981
Net gains on investments	(2,492,562)	(182,720)	(45,741)	—	(2,721,023)
Change in fair value of interest rate swaps	5,521	36,496	—	—	42,017
Change in split-interest agreements	45,222	—	(1,613)	—	43,609
Change in deferred tax asset and liability	57,219	—	—	—	57,219
Investment income for restricted purposes	(12,274)	—	11,369	—	(905)
Gifts restricted for long-term investments	(278,657)	(23,055)	(63,051)	—	(364,763)
Equity and fund transfers, net	(135,005)	98,431	36,574	—	—
Gifts of securities and properties	(27,432)	—	—	—	(27,432)
Other	25,950	—	—	—	25,950
Premiums received from bond issuance	—	19,885	—	—	19,885
Changes in operating assets and liabilities:					
Accounts receivable	58,006	1,339	(85,341)	—	(25,996)
Pledges receivable, net	(97,498)	15,000	13,163	—	(69,335)
Prepaid expenses and other assets	10,455	(108,485)	(9,078)	—	(107,108)
Accounts payable and accrued expenses	69,702	516,324	19,466	—	605,492
Accrued pension and postretirement benefit obligations	(81,802)	(112)	2,480	—	(79,434)
Lease liabilities	(21,174)	21,438	5,461	—	5,725
Deferred income and other obligations	73,049	28,142	30,258	—	131,449
<b>NET CASH PROVIDED BY (USED FOR) OPERATING ACTIVITIES</b>	<b>(545,776)</b>	<b>782,102</b>	<b>127,962</b>	<b>(20,847)</b>	<b>343,441</b>
<b>CASH FLOW FROM INVESTING ACTIVITIES</b>					
Additions to plant facilities, net	(896,941)	(310,641)	(75,759)	—	(1,283,341)
Student, faculty and other loans:					
New loans made	(105,086)	—	—	—	(105,086)
Principal collected	65,511	—	—	—	65,511
Purchases of investments	(15,912,497)	(56,991)	(32,603)	20,772	(15,981,319)
Sales and maturities of investments	17,168,829	465,997	29,088	—	17,663,914
Change associated with short term investments	(684,461)	—	—	—	(684,461)
Swap settlement payments, net	—	(16,825)	—	—	(16,825)
<b>NET CASH PROVIDED BY (USED FOR) INVESTING ACTIVITIES</b>	<b>(364,645)</b>	<b>81,540</b>	<b>(79,274)</b>	<b>20,772</b>	<b>(341,607)</b>
<b>CASH FLOW FROM FINANCING ACTIVITIES</b>					
Gifts and reinvested income for restricted purposes	329,708	24,015	73,466	—	427,189
Equity and fund transfers from Hospitals	178,727	(142,153)	(36,574)	—	—
Proceeds from borrowing	959,542	470,120	—	—	1,429,662
Repayment of notes and bonds payable	(179,792)	(74,134)	(8,245)	—	(262,171)
Bond issuance costs and interest rate swaps	(2,109)	(4,006)	—	—	(6,115)
Contributions received for split-interest agreements	55,503	—	—	—	55,503
Payments made under split-interest agreements	(46,095)	—	—	—	(46,095)
Securities lending collateral sold, net	(19,468)	—	—	—	(19,468)
Other	(14,319)	—	—	—	(14,319)
<b>NET CASH PROVIDED BY FINANCING ACTIVITIES</b>	<b>1,261,697</b>	<b>273,842</b>	<b>28,647</b>	<b>—</b>	<b>1,564,186</b>
<b>INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<b>351,276</b>	<b>1,137,484</b>	<b>77,335</b>	<b>(75)</b>	<b>1,566,020</b>
Cash and cash equivalents, beginning of year	1,237,809	505,520	276,822	(7,316)	2,012,835
<b>CASH AND CASH EQUIVALENTS, END OF YEAR</b>	<b>\$ 1,589,085</b>	<b>\$ 1,643,004</b>	<b>\$ 354,157</b>	<b>\$ (7,391)</b>	<b>\$ 3,578,855</b>
<b>SUPPLEMENTAL DATA:</b>					
Cash and cash equivalents as shown in the <i>Statements of Financial Position</i>	\$ 1,153,303	\$ 1,642,912	\$ 354,157	\$ (7,391)	\$ 3,142,981
Restricted cash and cash equivalents included in assets limited as to use	—	92	—	—	92
Restricted cash included in other assets	44,168	—	—	—	44,168
Cash and restricted cash included in investments	391,614	—	—	—	391,614
<b>TOTAL CASH AND CASH EQUIVALENTS AS SHOWN ON THE STATEMENTS OF CASH FLOWS</b>	<b>\$ 1,589,085</b>	<b>\$ 1,643,004</b>	<b>\$ 354,157</b>	<b>\$ (7,391)</b>	<b>\$ 3,578,855</b>
Interest paid, net of capitalized interest	\$ 146,730	\$ 69,105	\$ 36,072	\$ —	\$ 251,907
Change in payables for plant facilities	\$ (53,799)	\$ (100,190)	\$ (16,669)	\$ —	\$ (170,658)
Right-of-use assets obtained in exchange for lease liabilities	\$ 226,202	\$ 96,491	\$ 124,323	\$ —	\$ 447,016

**Schedule of Expenditures of Federal Awards**  
**Part A, Award Expenditures by Federal**  
**Program**



**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
<b>Research and Development Cluster</b>					<b>\$811,719,008</b>
<b>Department of Agriculture</b>					<b>\$443,189</b>
10.310	An omics and microscopic assessment pertaining to the collective dynamics of environmental multispecies biofilms that facilitate sanitizer tolerance and foodborne pathogen dispersal	Texas A&M AgriLife Research	M2002425		\$13,928
10.310	Investigating tomato immune signaling pathways through the study of the Xanthomonas T3S effector target Tomato Atypical Receptor Kinase 1		2018-67011-28034		-\$147
10.310	NRI: FND: COLLAB: Multi-Vehicle Systems for Collecting Shadow-Free Imagery in Precision Agriculture		2020-67021-30757		\$101,899
10.310	Predicting the resilience of carbon sequestration and productivity of forests and grasslands to changes in fire		2018-67012-28077		\$824
10.310	Predicting the response of soil carbon stocks to changes in plant inputs across spatiotemporal scales		2018-67012-27982		\$6,240
10.310	USDA UIUC Assessing cover crop as an adaptation to improve climate resilience of the US Midwest agro-ecosystems	University of Illinois at Urbana Champaign	09211-17062		\$80,526
10.604	Chlorate MRL barrier to EU export of California tree nuts and dried fruits.	DFA of California	TASC-101-SI		\$135,091
10.604	Preserving sulfuryl fluoride for dried fruit exports to the European Union	California Prune Board	PN 21-03		\$104,828
<b>Department of Commerce</b>					<b>\$1,374,570</b>
11.022	Wait, that forecast changed? Assessing how publics consume and process changing tropical cyclone forecasts over time		NA19OAR0220095		\$14,917
11.417	Advancing An Early Warning System For California Beach Water Quality With Forecasting And Nowcasting At Data Poor Beaches	University of Southern California	129407615/PO10888075		\$8,409
11.472	Improving Estimates of Natural Mortality of Atlantic Bluefin Tuna with Electronic Tags	Ocean Foundation	138979		\$97,781
11.472	FY20 NEFSC- Sanctuary acoustic data project: Quantifying marine sanctuary soundscapes to build effective management and outreach tools		NA20NMF4720277		\$109,327
11.609	155842 Science and Technology Enabling MEMS Vapor-Cells with Molecular Iodine		60NANB19D161		\$50,529
11.609	A Taxonomy of AI Risk		60NANB20D167	\$9,072	\$95,757
11.609	Seismic Assessment, Retrofit Strategies and Policy Implications for Vulnerable Existing Steel Buildings		70NANB17H245		\$193,820
11.620	120851_Endy_The Foundational Grant of the NIST & Stanford Joint Initiative for Metrology in Biology (JIMB)		70NANB15H268		\$1,579
11.RD	JIMB at Stanford: Training and Research in Biometrology	Stanford Linear Accelerator	IUA # 196842		\$25,750
11.RD	JIMB at Stanford: Training and Research in Biometrology	Stanford Linear Accelerator	IUA #205781		\$973,701
<b>Department of Defense</b>					<b>\$75,337,509</b>
12.300	134160-Gratta-ONR Rotation of Optically Levitated Microspheres	Yale University	GR102722 CON-80001233		\$57,730
12.300	20-000000630: Enhancing STEM educational experience in marine science and technology with a novel at-sea program		N00014-21-1-2439		\$12,268
12.300	214982 ONR North Pacific - Thomas - Competing energy cascades associated with seasonally-varying subsynoptic turbulence in the North Pacific Subtropical Countercurrent		N00014-21-1-2886		\$15,336
12.300	A CyberOctopus that Learns, Evolves, and Adapts	University of Illinois at Urbana Champaign	095643-17469		\$255,707
12.300	A proposal to study the effect of unsteady wall boundary conditions on turbulent boundary layers		N00014-19-1-2425		\$103,825
12.300	Accountable Protocol Customization		N00014-18-1-2620		\$150,486
12.300	Advanced multi-length characterization of inherently safe lithium-ion battery		N00014-19-1-2111		\$186,534
12.300	AI for Education: Designing Conversational Teaching Agents		N00014-18-1-2763		\$130,263
12.300	AI Nets: Predicting Actions and Inferring Intentions of Groups of Targets with a Network of Surveillance Robots		N00014-18-1-2830	\$213,283	\$370,848
12.300	Better Reinforcement Learning with Online Representation Discovery and Sample Efficient Learning		N00014-18-1-2769		-\$4,392
12.300	Camera Relocalization using 3D Point Clouds for Enhanced Underwater Situational Awareness		N00014-21-1-2082		\$77,239
12.300	Can specific interactions, such as covalent bonds between donor-acceptor molecules or hydrogen bonds, generate self-assembled surfactants to stabilize the D-A interface?	Pennsylvania State University	6118-SU-ONR-2453		\$487,814
12.300	COVID-19 - ViroMeter: A portable health assessment device for viral transmission control		N00014-21-1-2071		\$71,405
12.300	Design of Optimal Loss Functions for Statistical Estimation		N00014-18-1-2729		\$150,090
12.300	Determination of a RANS Model Form for Incompressible Wall-bounded Turbulent Flows using the Macroscopic Forcing Method and Validation on a Prolate Sphere		N00014-20-1-2718		\$42,815
12.300	Developing New Simulation Models for Machine Learning		N00014-17-1-2174		\$31,227
12.300	Developing next generation AI vision systems by characterizing and exploiting untapped primate visual processing circuit motifs	Massachusetts Institute of Technology	S5122/PO#496218		\$156,723
12.300	Development of GaN and AlGaIn growth platform for achieving 3.3-20kV power devices		N00014-21-1-2167		\$54,398
12.300	Development of Multi-functional Composite UAV Structures for Urban Operations		N00014-21-1-2100		\$43,883
12.300	Discovering and Modeling Turbulence and Chemistry Interactions in High Speed Reactive Flows	University of Michigan	SUBK00014012 / PO 3006515445		\$18,308
12.300	Dissecting the causal role of neural dynamics in supporting computation and behavior		N00014-18-1-2158		\$144,085
12.300	Dissipative quantum dynamics and error-correction with quantum acoustics		N00014-20-1-2422		\$292,316
12.300	DoD-Newton: Recovering information from behind the black hole horizon		CXLD - see TGZAA		-\$15,734
12.300	DoD-Newton: Recovering information from behind the black hole horizon		HQ00342010031		\$49,817
12.300	Elements of Causal Learning: Basic Concepts, Theory, Methods, Algorithms and Applications	Temple University	264443-SU PO592977		\$174,321
12.300	Engineering Functionality in Emergent Oxide Thin Film Materials Systems		N00014-16-1-2510		-\$27,316
12.300	Enhancing Mechanical and Combustion Properties of Boron/Polymer Composites via Engineered Interfacial Chemistry		N00014-19-1-2085		\$323,539
12.300	Extending Capabilities in Synthesis and Characterization of Energetic Materials		N00014-19-1-2428		\$77,400
12.300	Flexible Vision-Based Robotic Manipulation via Meta Learning and Deep Reinforcement Learning		N00014-20-1-2675		\$149,391
12.300	Fundamental studies and applications of spin-orbit interactions of light	Boston University	4500003519		\$166,368
12.300	Game-theoretic mechanisms for group decision making		N00014-19-1-2268	\$137,488	\$260,684
12.300	Getting More from Less: Optimal Estimation and Learning, For Sparse, High Dimensional, or Untrusted Data		N00014-18-1-2295		\$141,984
12.300	Global stability and sensitivity analysis of a hypersonic slender cone		N00014-17-1-2341		\$594
12.300	Hacking for Defense 2.0 for ONR NEPTUNE and NURP Programs		N00014-21-1-2101		\$100,871
12.300	High Performance Roll-to-Roll Coated All-Polymer Solar Cells		N00014-17-1-2214		\$28,494
12.300	High-Assurance Cryptography		N00014-19-1-2292	\$522,877	\$826,454
12.300	High-fidelity numerical simulation to understand the physics of surface/internal gravity wave interactions		N00014-20-1-2707		\$145,779
12.300	High-fidelity Simulations and Predictive Modeling of Jet Screech.		N00014-18-1-2391		\$173,816
12.300	High-Performance and Reliable Automated Carrier Landing via CFD-Based Model Predictive Control		N00014-17-1-2749		\$102,357
12.300	Identifying mechanisms of degradation in perovskite solar cells and improving their stability		N00014-17-1-2525		-\$650
12.300	Improving RANS for 3D Flows Using Machine Learning and Model Interpretation		N00014-19-1-2075		\$51,322
12.300	Integrated Harvesting and Storage of Oxygen from Seawater Using Efficient Bipolar Membrane Electrolysis, Impurity Tolerant Electrocatalysts, and Designer Metal Organic Frameworks	University of Oregon	234640A		\$291,747
12.300	Investigating Magnetic Flux Rope Emergence as the Source of Flaring Activity in Delta-Spot Active Regions		N00173-19-1-G902		\$54,576
12.300	Investigation of Deep Learning for Solid and Fluid Simulations		N00014-19-1-2285		\$41,014

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
12.300	JTO MRI: Power Scalable Electrically Driven Monolithic IR Surface Emitting Lasers	University of Texas at Arlington	126060159062		\$143,443
12.300	Laser propagation in heterogeneous media and applications to off-axis reconstructions		N00014-17-1-2145		\$31,605
12.300	Learning with domain knowledge: an implicit probabilistic models approach		N00014-19-1-2145		\$166,473
12.300	Machine Learning in Wireless System Design		N00014-18-1-2191		\$111,475
12.300	Measuring Heart Rate to Assess the Stress Response in Large Whales		N00014-19-1-2455	\$119,831	\$247,016
12.300	Millimeter-Wave Cavity-QED for Scalable Quantum Gates with Rydberg Atoms		N00014-21-1-2451		\$257,833
12.300	Model down-scaling to study flow over abrupt topography: Nesting a new unstructured-grid, isopycnal-coordinate model based on SUNTANS into the hybrid-coordinate HYCOM model		N00014-16-1-2256		\$90,287
12.300	Navigating the Space of Chemical Reactions From First Principles		N00014-21-1-2151		\$1,261
12.300	NEPTUNE: Stanford University Hacking for Defense		N00014-17-1-2919		\$707,742
12.300	Neuromorphics: Programmable Analog Computation		N00014-15-1-2827		\$30,204
12.300	Next generation near infrared interference coatings with ultra-low stress and losses for deformable mirror applications	Colorado State University	G-01705-01		\$149,346
12.300	Noise-resilient Inertial Sensing Using Group II Atom Interferometry		N00014-17-1-2247		\$6,695
12.300	Non-reciprocal photonic gauge potential and non-equilibrium thermal metaphotonics for the control of light and heat		N00014-17-1-3030		\$730,086
12.300	N-Polar Nitride Vertical devices for RF application		N00014-19-1-2611		\$326,774
12.300	Numerical Simulation of Hypervelocity Impact Induced Phenomena		N00014-21-1-2405		\$32,909
12.300	One- or Two-Laser Yb Optical Atomic Clock		N00014-17-1-2255		\$93,638
12.300	Operationalizing Machine Learning for Navy Analysts with Data Programming		N00014-20-1-2275		\$100,393
12.300	Optimizing Confocal Line-of-sight and Non-Line-of-sight Imaging	University of Wisconsin-Madison	831K751		\$13,750
12.300	PCP@Xtreme 4 Predictive Chemistry & Physics at Extreme Temperature and Pressure molecules, crystals and microstructures	Purdue University	13000469-018		\$254,075
12.300	Photoacoustic Airborne Sonar for Non-Contact Detection Under Water		N00014-19-1-2241		\$339,987
12.300	Photomechanical Material Systems: From Molecules to Devices	University of Massachusetts Amherst	18-010467 D 02		\$175,290
12.300	Physical understanding and predictive modeling of high Reynolds number non-equilibrium turbulent boundary layers		N00014-17-1-2310		\$298
12.300	Physically Robust Metasurfaces for High Power Optoelectronics Applications		N00014-20-1-2105		\$102,412
12.300	Practical Optimality Guarantees in Estimation and Learning		N00014-19-1-2288		\$185,068
12.300	Proactive Decision Making for Autonomous Systems: a Formal Methods Approach		N00014-17-1-2433		\$79,192
12.300	Provably-Stable Vision-Based Control of High-Speed Flight through Forest and Urban Environments - MURI Subcontract from MIT	Massachusetts Institute of Technology	5710003209		-\$442
12.300	Quantum Opto-Mechanics with Atoms and Nanostructured Diamond (QOMAND)	Harvard University	123950-5092630		\$67,539
12.300	Quantum-limited sensing		N00014-16-1-2812		\$734,951
12.300	Rapid-Tuning Laser Systems for Spectrally-Resolved Diagnostics of High-Enthalpy Flows		N00014-20-1-2546		\$88,005
12.300	Real-time state awareness via nerve-like sensing system for autonomous fly-by-feel aerial vehicle		N00014-20-1-2211		\$134,272
12.300	Scalable Entanglement for Heisenberg-Limited Clocks and Sensors		N00014-17-1-2279		\$57,364
12.300	Sensing quantum vacuum fluctuations from correlated materials		N00014-21-1-2896		\$111,150
12.300	Social Learning and the Diffusion of Information in Social Networks		N00014-19-1-2550		\$186,572
12.300	Solving Complex Tasks with Team-Based Crowdsourcing		N00014-16-1-2894		-\$57
12.300	Spectrally-Resolved Laser Diagnostics for High-Enthalpy Flow Sensing		N00014-20-1-2322		\$136,545
12.300	Surface breakdown and plasma formation in cross-field high power microwave sources		N00014-21-1-2698		\$10,404
12.300	Synthesis Planning and Reaction Discovery For Photochemistry and Chemistry in Novel Environments		N00014-18-1-2659	\$377,843	\$1,906,261
12.300	Synthetic Nucleic Acid Nanoparticles for RNA Structural & Synthetic Biology	Massachusetts Institute of Technology	S4989 PO #429177/N000142012084		\$47,941
12.300	The role of mesoscale strain in the near-surface decay and propagation of high-mode near-inertial wave energy		N00014-18-1-2798		\$77,948
12.300	Thermochemical Transformations Using Entropy-Stabilized Oxides		N00014-17-1-2918		\$85,407
12.300	Top-Down And Bottom-Up Brain Mechanisms At Multiple Spatial And Temporal Scales: Experimental Investigation And Computational Modeling		N00014-16-1-2127	\$231,051	\$412,069
12.300	Tracking, Diagnosing and Arresting Dielectric Breakdown Using Multiscale Characterization and Simulations	University of Connecticut	PO# 163166/KFS# 5641050		\$275,278
12.300	Trusted Machine Learning: Statistical Tools for Making the Black Box Effective		N00014-20-1-2157		\$215,131
12.300	Tunable electromagnetic surfaces using hybrid semiconductor-plasmonic optoelectronics		N00014-16-1-2630		-\$37
12.300	Ultra-High Efficiency Topological Inductors	University of Illinois at Urbana Champaign	088800-17828		-\$48,021
12.300	Uncovering Complex Reaction Networks from First Principles		N00014-17-1-2875		\$342,172
12.300	Understanding and Applying Non-Euclidean Geometry in Machine Learning		N00014-20-1-2480		\$146,117
12.300	Understanding Scenes and Events through Joint Parsing, Cognitive Reasoning and Lifelong Learning	University of California, Los Angeles	1015 G WA525		\$131,745
12.300	Vannevar Bush Faculty Fellowship (VBFF)		N00014-18-1-2864		\$599,842
12.300	Visual Reasoning via Spatio-temporal Scene Graphs		N00014-19-1-2477		\$176,313
12.300	Warfighter protection against blast / ballistic / directed energy threats via lightweight, wearable, reconfigurable colloidal gels		N00014-18-1-2105		\$9,830
12.300	XASEM for Surface Chemical Imaging Approaching Atomic-Scale Precision		N00014-19-1-2463		\$36,431
12.351	A basic research pipeline for discovery and early preclinical development of host-targeted antiviral strategies to combat encephalitic alphaviruses		HDTRA11810039	\$145,936	\$601,089
12.351	Development of biologic countermeasures for saxitoxin (STX) poisoning	University of California, San Francisco	12761SC		\$6,816
12.351	Development of biologic countermeasures for saxitoxin (STX) poisoning	University of California, San Francisco	12762SC		\$17,508
12.351	High-resolution characterization of saxitoxin (STX) recognition	University of California, San Francisco	11791SC		\$285,694
12.420	126814_DOD_Targeting BMPR2 Signaling to improve Right Ventricular Function in Congenital Heart Disease		W81XWH-17-1-0327		-\$2,389
12.420	RSK3-mAKAP Targeting as a New Therapeutic Strategy for Heart Failure with Preserved Ejection Fraction in Women		W81XWH1810178		\$372,222
12.420	Intraocular Microdisplay Projection for Vision Restoration After Corneal Blindness		W81XWH1910542		\$239,706
12.420	1999739(Fan)- USAMRAA Utilizing the Immune Response to Tumor Neoantigens for Kidney Cancer Early Detection		W81XWH2110269		\$21,417
12.420	68Ga Bombesin PET/MRI in Patient		W81XWH-16-1-0604		\$80,980
12.420	A Comprehensive Approach to Whole Eye Transplantation: Building a Scientific Foundation for New Therapies in Vision Restoration	University of Colorado Denver	FY21.1065.003 // 2-5-A9627		\$38,329
12.420	A Modeling-Based Personalized Screening Strategy Combining Circulating Biomarker and Imaging Data for Breast Cancer Early Detection		W81XWH-18-1-0342		\$68,330
12.420	A Phase IIB, randomized, placebo-controlled, multicenter study of the comparative efficacy and safety of transcatheter injection of allogeneic mesenchymal stem cells versus placebo in patients with non-ischemic dilated cardiomyopathy (DC)	University of Miami	OS00000030 // PO SPC-001458		\$125,219
12.420	A Rapid Blood Test to Differentiate Latent Tuberculosis from Active Disease	University of California, San Diego	113394183 (S9002292)		\$246,601
12.420	Altering the tumor microenvironment to augment neuroblastoma immunotherapy	Children's Hospital Los Angeles	RCF011694-A		\$23,132
12.420	Artificial-intelligence aided findings detection models for diagnostic imaging in Prostate Cancer		W81XWH1810396		\$38,034
12.420	Battlefield-Ready Fully Handheld Anterior-Segment Optical Coherence Tomography	Vanderbilt University	UNIV62140		\$89,367

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
12.420	Biomarker driven targeted therapy for late-recurring ER-positive breast cancer		W81XWH1910739		\$355,158
12.420	Biomarker driven targeted therapy for late-recurring ER-positive breast cancer.		W81XWH1910740		\$172,150
12.420	Brain neuropeptide signaling and autism spectrum disorder		W81XWH2110210		\$49,116
12.420	Corticospinal neuron transplantation to repair chronic cervical spinal cord injury		W81XWH-18-1-0260		\$306,673
12.420	Defining the role and therapeutic potential of Notch signaling in aggressive prostate cancer		W81XWH-18-1-0141		-\$2,975
12.420	Defining the role of neuronal activity on the initiation of Neurofibromatosis Type I (NF1)-associated pediatric optic glioma		W81XWH-19-1-0260		\$140,284
12.420	Detecting Relapse Causing Populations at the time of Diagnosis in B-cell Progenitor Acute Lymphoblastic Leukemia		W81XWH-20-1-0456		\$215,819
12.420	Development and preclinical validation of an improved tissue engineered vascular graft for use in congenital heart surgery	Research Institute at Nationwide Children's Hospital	710049-0921-00/PO4602317-0-46		\$205,457
12.420	Dual PET/Fluorescence Imaging of Glioma with an MMP-14 Activable Peptide Probe	University of Alabama	000518502-001		\$18,137
12.420	Efficacy of Repetitive Transcranial Magnetic Stimulation for Improvement of Memory in Older Adults with TBI Problems in Complex TBI	Palo Alto Veterans Institute for Research	ADA0007-01; PO# ADA074575		\$30,251
12.420	Epigenome editing and reactivation of X-linked FOXP3 for treating breast cancers		W81XWH-17-1-0018		\$3,888
12.420	Exosomes as a Reliable Noninvasive Method for Monitoring VCA Graft Rejection		W81XWH2010367		\$191,976
12.420	Ferroptosis induction is a novel therapeutic strategy for advanced prostate cancer		W81XWH-19-1-0333		\$160,379
12.420	Fusion genes predict prostate cancer recurrence		W81XWH-16-1-0542		\$168
12.420	High-Resolution Retinal Prosthesis for Restoring Sight to Patients Blinded by Retinal Injury or Degeneration		W81XWH1910738		\$336,193
12.420	Hybrid bone-tendon grafts for enhanced tendon healing		W81XWH2010343		\$169,526
12.420	Identification and Therapeutic Targeting of a Novel Cell Population in Rejection of Vascularized Composite Allotransplantation		W81XWH2010363		\$285,261
12.420	Identification and Therapeutic Targeting of a Novel Cell Population in Rejection of Vascularized Composite Allotransplantation		W81XWH2010364		\$183,387
12.420	Identification of Siglec-9 ligand for T cell immunoevasion in advanced prostate cancer		W81XWH2110195		\$95,646
12.420	Identify and target innate immune checkpoints to treat metastatic breast cancer		W81XWH-18-1-0041		\$219,901
12.420	Imaging and Exosomal Genomics as An Early Identifier of Lung Cancer		W81XWH2010747		\$45,534
12.420	Imaging and Exosomal Genomics as An Early Identifier of Lung Cancer.		W81XWH2010746		\$14,262
12.420	Immune Responses Associated with Acute Pancreatitis		W81XWH-17-1-0339		\$18,528
12.420	Improving Voluntary Engagement for PTSD Treatment Among Soldiers	University Of Washington	UWSC11285; BPO 41961		\$56,107
12.420	Just-in-Time, Single-Dose, Universal Anti-Influenza A Virus Therapeutic		W81XWH-18-1-0647		\$640,133
12.420	Mechanisms and Treatment Development for Pancreatitis Resulting from Alcohol Abuse and Smoking	Cedars-Sinai Medical Center	0001621388		\$430,431
12.420	Multicenter Randomized Trial of Everolimus in Pediatric Heart Transplantation	Boston Children's Hospital	GENFD0001739369		-\$2,643
12.420	Multicenter Randomized Trial of Everolimus in Pediatric Heart Transplantation	Boston Children's Hospital	GENFD0001905941		\$44,018
12.420	Multicenter Randomized Trial of Everolimus in Pediatric Heart Transplantation - CCC	Boston Children's Hospital	GENFD0001890279		\$16,853
12.420	Multicenter Randomized Trial of Everolimus in Pediatric Heart Transplantation - CCC	Boston Children's Hospital	GENFD0001901925		\$394,796
12.420	Nasal oxytocin for the treatment of post-TBI chronic headache: influence of estrogen		W81XWH2110186		\$64,167
12.420	Novel Strategies to Combat Post-Traumatic Osteoarthritis (PTOA)		W81XWH1810590	\$775,093	\$1,717,866
12.420	Optimizing a Novel Intraductal Delivery of Calcineurin Inhibitors as a Radiocontrast Infusion Formulation to Prevent Post-ERCP Pancreatitis		W81XWH1910683	\$74,977	\$926,501
12.420	Photovoltaic Retinal Prosthesis for Restoring Sight to Patients Blinded by Retinal Injury or Degeneration		W81XWH-15-1-0009		-\$1,090
12.420	Prospective Multicenter Comparative Effectiveness Study of Post-Traumatic Venous Thromboembolism (CLOTT Study)	National Trauma Institute	NTI-CLOTT17-10		-\$2,521
12.420	Prospective, Randomized, Placebo-Controlled Phase II Trial Of Aspirin For Vestibular Schwannomas	Massachusetts Eye and Ear Infirmary	16-0231 / 2300179		\$1,000
12.420	Regenerating the blast and noise damaged cochlea		W81XWH-14-1-0517		\$128
12.420	Relating the interplay of tumor function and host response to clinical outcome in triple negative breast cancer		W81XWH2110143		\$385,401
12.420	Selective AAK1 and GAK inhibitors for combating Dengue and other emerging viral infections		W81XWH-16-1-0691		-\$130
12.420	Targeting Metastatic Breast Cancer with Copper Trap Assembled in Situ		W81XWH1810591		\$154,469
12.420	The neuronal role of mitofilin, the housekeeper of mitochondrial crista architecture		W81XWH-16-1-0282		\$2,270
12.420	The role of hypoxia in the tumor microenvironment: Implications for ovarian cancer therapy.		W81XWH-15-1-0097		-\$57
12.420	The Role of Nemolike Kinase in the Pathogenesis and Treatment of Diamond Blackfan Anemia		W81XWH1910431		\$209,848
12.420	Towards better understanding and predicting severe dengue.		W81XWH-19-1-0235		\$636,218
12.420	Translating a stem cell-based therapy for epidermolysis bullosa into the clinic	University of Colorado Denver	FY19.489.001		-\$29,838
12.420	Understanding and targeting pulmonary arteriovenous malformations using repurposed drugs		W81XWH1910505		\$1,040,751
12.420	Understanding the Prognostic Impact of NK Cell Heterogeneity in Melanoma		W81XWH2010548		\$115,040
12.431	10.2.3 Social Network Analysis: Brain predictors of social network structure and function		W911NF-17-1-0446		-\$10,272
12.431	3b: Investigation of Transient Contaminant Dispersion in Mock Urban Canopies		W911NF-21-2-0080		\$75,052
12.431	3D Object and Scene Variation Synthesis for Learning Algorithms (Topic:k.Artificial Intelligence and Machine Learning)		W911NF2120104		\$52,680
12.431	Acquisition of a Mechanical Tester on Miniature Samples for the Development of Unprecedented Polymer Materials with Unique Mechanical Response and Mechanical Behavior		W911NF1910252		\$7,603
12.431	Biomimetic organic electronic transistors for characterizing host cell-pathogen interactions		W911NF1820152	\$299,729	\$556,489
12.431	Blockchain Governance: Current Approaches and Research Directions		W911NF2010190		\$44,765
12.431	Center for Distributed Quantum Information (CDQI)	University of Maryland	48635-Z8401006		-\$4,192
12.431	Computing with neuromorphic dissipative quantum phase transitions		W911NF-15-1-0597		-\$1,167
12.431	Continuation of the development of dielectric layers for Single chip GaN E-mode devices		W911NF-19-2-0324		\$28,410
12.431	Deep Models of Compositionality and Context		W911NF-15-1-0462		\$71,808
12.431	Dimension reduction for open quantum systems		W911NF-16-1-0086		\$82,305
12.431	Earth Materials and Processes: Scale Dependence of Governing Laws in Earth Materials		W911NF-18-1-0008		\$88,443
12.431	Efficient, Robust and Reliable Neural Networks for Multimodal and Synthetic Data: A Sparse Representation Perspective		W911NF-21-1-0242		\$47,630
12.431	Engineering diamond quantum optical systems for quantum computing and simulations		W911NF-18-1-0062		\$59,834
12.431	Engineering the translation apparatus for synthesis of electronically active sequence-defined polymers	Northwestern University	6004493 STAN		\$99,466
12.431	Enhanced-Optical-Access Test-Section for Laminar Flame Studies in Shock Tubes		W911NF2010236		\$12,202
12.431	Exergy/Energy-based Analysis as a tool to estimate battlefield energy for ground military vehicles		W911NF1920319		\$62,851
12.431	High Pressure Deformation Mechanisms in Lightweight Alloys		W911NF2020171		\$162,098
12.431	Kinetics Studies of ARO-Relevant Fuels using Shock Tube/Laser Absorption Methods		W911NF-17-1-0420		\$107,236
12.431	Ladderene-Based Polymechanophores: From Understanding Mechanotransduction to Developing Materials with Amplified Force-Response		W911NF1910059		\$381,125

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
12.431	Laser and Imaging Systems for the Study of High-Temperature Laminar Flames in Shock Tubes		W911NF2010068		\$62,492
12.431	Laser-Based Alkene Sensors For Shock Tube Kinetics		W911NF-14-1-0357		-\$1,416
12.431	Learning Robust Classifiers from Small Data using Generative Models		W911NF2110125		\$32,631
12.431	Models and algorithms for higher order network inference		W911NF1910031		\$144,124
12.431	Multifunctional Composite Materials with Built-in Structural Health Monitoring and Energy-storage Capabilities		W911NF-17-2-0161		-\$20,255
12.431	MURI TOPIC 14 Information Exchange Network Dynamics: A multilevel multimodal approach to network information dynamics	University of Illinois at Urbana Champaign	100440-17936		\$442,992
12.431	Near-Field Radiative Heat Transfer and Energy Conversion in Nanogaps of Nano- and Meta-Structured Materials	University of Michigan	SUBK00010159 / PO 3005531165		\$168,160
12.431	Optimizing Range and Velocity Sensing with Computational Single-photon Imaging		W911NF1910120		\$225,236
12.431	PECASE W911NF-12-R-0012-04: Answering High-Level Questions on Low-Level Data		W911NF1910028		\$196,703
12.431	Physical Properties of Materials: Phonon Localization via Defect Engineering in Low-Dimensional Boron Nitride		W911NF1910358		\$10,376
12.431	Precision Measurements of Transverse Transport Coefficients by Torque Magnetometry		W911NF-17-1-0588	\$19,127	\$160,170
12.431	Quantum Control of Cold Collisions Using Stark-Induced Adiabatic Raman Passage		W911NF1910163		\$439,754
12.431	Quantum neuromorphic computing and simulation with multimode cavity QED		W911NF-19-1-0262		\$368,963
12.431	Quantum Simulation of Frustrated Magnets by Rydberg Dressing		W911NF-16-1-0490		\$143,010
12.431	Quantum State Control of Molecular Collision Dynamics	University of Missouri	C00064278-5		\$192,304
12.431	Recognizing and describing complex human activities from video sequences	University of Illinois	2015-05174-01		\$129,650
12.431	Reconfigurable functional materials		W911NF2110092		\$82,693
12.431	Regaining Control in Reinforcement Learning		W911NF2010055	\$35,411	\$188,876
12.431	Resource Allocation in Slow Growing Methanogenic Archaea		W911NF2010111		\$170,885
12.431	Robust Entanglement-Enhanced Metrology with Atoms and Solid-State Spins		W911NF2010136	\$431,391	\$554,627
12.431	Scalable Memory-Enhanced Ion-Trap Quantum Network (SciNet)	University of Innsbruck	Prime Award: W911NF-15-2-0060		-\$24,689
12.431	SCAN: Socio-Cultural Attitudinal Networks	University Of Maryland At College Park	38796-Z8424103		\$101,988
12.431	Semantic Information Pursuit for Multimodal Data Analysis	Johns Hopkins University	2003514594		\$34,281
12.431	Single cell Analysis for Forensic Epigenetics (SAFE)	Salk Institute for Biological Studies	PO P1032821		\$759,779
12.431	STIR: Imaging nonlocal electronic transport with the SQCRAM scope		W911NF1910392		-\$96
12.431	STIR: Toward the exploration of the quantum vacuum optics of metamaterials with the SQCRAMscope		W911NF2110329		\$8,688
12.431	Strengthening and Armoring of Sheared Granular Beds	Yale University	GK0000625(CON-80000153)		\$17,819
12.431	Studies of ARO-Relevant Fuels using Shock Tube/Laser Absorption Methods		W911NF-13-1-0206		-\$1,213
12.431	Topics II.A.2.a and II.A.2.c: Photonic and Phononic Technologies for Superconducting Quantum Information Systems	California Institute of Technology	S387326		\$463,729
12.431	Toward Scalable Quantum Photonic Engineering with OPO Networks	California Institute of Technology	S398444		\$39,932
12.431	Transient Contaminant Concentration Measurements in Simulated Urban Canopies		W911NF2020015		\$15,095
12.431	W911NF-12-R-0011-04: Towards a process-based understanding of sediment degassing and ramifications for the mechanical stability of permafrost, Earth Material and Processes		W911NF1910088		\$125,251
12.599	Using Geographic Variations to Improve Quality and Reduce Costs in the Military Health System	Dartmouth College	R1361		\$35,963
12.630	Human-Centered Design and Control		FA9550-20-1-0154		\$120,221
12.630	JoBT	University of Illinois	o88831-18416		\$46,125
12.750	Comparing hospital hand hygiene in Liberia: soap, alcohol, and hypochlorite	Henry M Jackson Foundation for the Advancement of Military Medicine	4058 // PO 927761		\$203,881
12.750	Promoting health and readiness among US Army Special Operations forces	Henry M Jackson Foundation for the Advancement of Military Medicine	5175 (PO# 987592)		\$102,941
12.800	Advanced diagnostics for detonation waves in small tubes and nano carbon formation at high pressures		FA9550-20-1-0197		\$490,669
12.800	APOS_Robustness, simulation and error correction for quantum dynamics		FA9550-19-1-0369		\$55,688
12.800	Air Force Fiscal Year 2014 Young Investigator Research Program (YIP)		FA9550-14-1-0291		-\$1,021
12.800	An Architecture for Normative, Explainable, and Justified Agency		FA9550-20-1-0130		\$148,800
12.800	ANSRE: Analysis and Synthesis of Rare Events		FA9550-20-1-0397	\$496,888	\$844,790
12.800	Atomically-Thin Systems That Unfold, Interact And Communicate At The Cellular Scale	Cornell University	76123-10600		\$76,812
12.800	Avian-Inspired Multifunctional Morphing Vehicles	University of Michigan	3003832414		\$87,872
12.800	Brain-Inspired Networks for Multi-functional Intelligent Systems in Aerial Vehicles	University of California, Los Angeles	0205 G XA211		\$178,403
12.800	Catalyst and Fuel Interactions to Optimize Endothermic Cooling	University of Utah	10029173-S2		-\$1,215
12.800	Characterizing Dusty Plasmas Formed by Hypervelocity Impacts Through Experiments and Particle-In-Cell (PIC) Simulations		FA9550-18-1-0117		\$44,703
12.800	Chemistry with Microdroplets		FA9550-16-1-0113		\$199,407
12.800	Coherent Structures in Plasmas of Conditions Relevant to Electric Propulsion		FA9550-14-1-0017		-\$480
12.800	Developing Methods of Control of Self-Organized Plasma Structures in Devices Relevant to Electric Propulsion	Princeton University	SUB0000171		\$102,807
12.800	Development of a Compact Laser-Driven Dielectric Accelerator for Future X-Ray Lasers		FA9550-14-1-0190		-\$5,201
12.800	Development of HyChem - A Jet and Rocket Fuel Combustion Chemistry Model		FA9550-16-1-0195		\$151,426
12.800	Effects of disorder on electronic properties near nematic quantum phase transitions: model systems to explore fundamental physics relevant to the discovery of new superconducting phases		FA9550-20-1-0252		\$162,464
12.800	Embedded Boundary Methods with Stability, Accuracy, and Smoothness Guarantees for Multidisciplinary Design, Analysis and Optimization		FA9550-20-1-0286		\$288,655
12.800	Energy-Efficient Nanophotonic Neuromorphic Computing	University of California, Davis	A18-0583-S001		\$23,859
12.800	Engineering light-mediated interactions in dysprosium for quantum many-body physics		FA9550-17-1-0266		\$365,402
12.800	Evaluation of Aerothermochemistry Models Through Sensitivity Analysis and LowUncertainty Experiments	University of Colorado, Boulder	1560116 // PO 1001441567		\$106,840
12.800	Exploiting Extreme Molecular-Confinement in Hybrids for Enhanced Mechanical and Thermal Behavior		FA9550-21-1-0070		\$78,755
12.800	Fundamental Aspects of NO IR Spectroscopy in High T and P Air		FA9550-18-1-0282		\$93,251
12.800	Hierarchical Strategy for Supporting Validation of Combustion Simulations		FA9550-21-1-0077		\$25,217
12.800	High-Fidelity Verification and Validation of Spaceborne Vision-Based Navigation Systems (DURIP)		FA9550-18-1-0492		\$65,595
12.800	High-resolution 3-Dimensional Optoelectronic Neural Interface for Restoration of Sight		FA9550-19-1-0402		\$332,738
12.800	Hot Magnetized Plasma Acceleration Devices and Modes for Agile Plasma Thrusters		FA9550-21-1-0016		\$34,838
12.800	Hybrid-Materials Valley Optoelectronics for Photon Spin Communication	Cornell University	FA9550-18-1-0480		\$272,169
12.800	Information-Geometric Approach for Data-Driven Multiscale Simulations		FA9550-18-1-0474		\$87,302
12.800	Internal Cooling of Fiber, and Disc lasers by Radiation Balancing and other Optical or Phonon Processed	University of Illinois at Urbana Champaign	o84272-16070		\$242,074

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
12.800	In-Vivo Validation of Analyte Partitioning Mechanisms for Peripheral Biochemical Monitoring	University of Cincinnati	013176-00004		\$86,338
12.800	Learning and MetaLearning of Partial Differential Equations via Physics-Informed Neural Networks: Theory, Algorithms, and Applications	Brown University	00001656		\$310,579
12.800	Low-Power, Ultrafast, Integrated Nano-Optoelectronics	University of Texas at Austin	UTA16-001253		\$849,466
12.800	Magnet-Free Non-Reciprocal Metamaterials Based on Spatio-Temporal Modulation	Research Foundation, The City University of New York	CM00001531-00		\$467,515
12.800	Mechanistic Studies of Microdroplet Chemistry		FA9550-21-1-0170		\$56,238
12.800	Mesoscopically Structured Ionic Materials: RTIL Thin Films and Perovskite White Light Emitters		FA9550-20-1-0335		\$134,280
12.800	Multifunctional dielectric metasurface for coding/decoding and sensing of light		FA9550-18-1-0323		\$14,823
12.800	Multi-functional Metafilms for Augmented Reality		FA9550-17-1-0331		-\$2
12.800	Multiscale Stochastic Modeling, Conditioning, and Simulation of Rare Events	University of Southern California	138557016		\$83,160
12.800	Nanophotonic neural networks with nonlinear, reconfigurable metasurfaces		FA9550-20-1-0120		\$265,856
12.800	Next Generation Mid-Infrared Laser Diagnostics for Hypersonics and High-Enthalpy Test Facilities		FA9550-19-1-0205		\$29,022
12.800	Optimal PRN Codes and Receiver Design for More Robust and Secure Satellite Navigation		FA9453-20-1-0002		\$440,427
12.800	Optophysiology: interferometric imaging of the intrinsic neural signaling		FA9550-20-1-0186		\$191,982
12.800	Organizational Implications of Autonomy-Mediated Interaction	University of Southern California	117882732/PO10804112		\$4,479
12.800	PECASE: New material and design approaches for integrated nano-optical systems		FA9550-20-1-0070		\$206,104
12.800	Plasma-Based Reconfigurable Photonic Crystals and Metamaterials		FA9550-14-1-0317	\$369,282	\$648,094
12.800	Quantum Codes, Tensor Networks, and Quantum Spacetime	University of California, Santa Barbara	KK2015		\$122,902
12.800	Quantum Optimization with Rydberg Atoms		FA9550-20-1-0059		\$160,667
12.800	R&D to Improve the Integrity and Safety of the PNT Solution Using Current and Future SatNav signals		FA9453-21-2-0007		\$53,543
12.800	Random Initiation and Reaction Propagation in Energetic Materials		FA9550-17-1-0417		\$22,997
12.800	Reaction Networks and Mechanisms: Discovery and Application in Combustion		FA9550-16-1-0051		-\$64
12.800	Reaction Networks and Mechanisms: Discovery and Application in Combustion		FA9550-16-1-0051	\$13	\$13
12.800	Research And Development Of High Energy 2-Micron Lasers Based On Tm: Doped Ceramic Laser Gain Media And Tm: Doped Optical Fibers		FA9550-10-1-0560		-\$513
12.800	Semantics, Formal Reasoning, and Tool Support for Quantum Programming	Tulane University	TUL-SCC-553955		\$118,846
12.800	Sensitizing Reaction Chemistry in Detonation		FA9550-16-1-0486		\$222,720
12.800	Sensitizing Reaction Chemistry in Detonation - Chemical Kinetics		FA9550-20-1-0398		\$112,699
12.800	Shock Tube Measurements of High-Enthalpy Molecular Energy Transfer Processes in Air	University of Michigan	3002436999		-\$347
12.800	Shock Tube Measurements of Reacting Flows: Endothermic Fuel Cracking and Combustion	University of Southern California	PO# 10012795/34276449		-\$568
12.800	Space surveillance with correlation based radar		FA9550-18-1-0519	\$217,538	\$350,355
12.800	Spectroscopic Imaging of Defects Using Radiation-Actuated Scanning Electron Microscopy		FA9550-19-1-0309		\$169,061
12.800	Spectroscopic Measurements and Nonequilibrium Modeling for High-Enthalpy Air	California Institute of Technology	S437969		\$201,750
12.800	Stretchable Polymer Semiconductors		FA9550-18-1-0143		\$111,332
12.800	Supermaneuverable Autonomous Pursuit: Peregrine Falcon Versus Pigeon Inspired UAVs		FA9550-18-1-0525	\$169,400	\$534,108
12.800	Surfaces, Particles, and Structured Liquids - Ultrafast Nonlinear Experiments		FA9550-16-1-0104		\$59,283
12.800	Theoretical Characterization of Electron Transport in Partially Magnetized Plasmas	Texas Engineering Experiment Station	M2000703		\$130,506
12.800	Toward Quasi-Ballistic Transport in 2D Transistors		FA9550-14-1-0251		\$895
12.800	Towards Dissipation-less Conduction in Oxide Topological Insulators		FA9550-20-1-0293		\$320,870
12.800	Understanding PAH Clustering Facilitated by Metal Cations at High Temperatures	University of Utah	10052440-SI// PO U000197139		\$81,063
12.800	Uv And Ir Laser Systems For Spectrally-Resolved Reacting Flow Diagnostics		FA9550-19-1-0209		\$161,505
12.800	Variational Methods for Information Processing and Learning		FA9550-19-1-0024		\$128,173
12.800	Wall-modeled LES for high-speed transitional boundary layers interacting with incident shock waves		FA9550-16-1-0319		\$23,758
12.800	What if we could electrically tune properties of strongly-correlated materials just like we can with semiconductors?		FA9550-16-1-0126		-\$100,433
12.901	Extracting Information from Rich Video Streams: An Agile Software/Hardware Approach		FA8650-18-2-7861		\$1,446,668
12.901	Upscale: Scaling up formal tools for POSH Open Source Hardware		FA8650-18-2-7854	\$627,055	\$1,736,855
12.910	A General and Ultra-high-performance Platform for Nonlinear Photonics		D19AP00040		\$586,400
12.910	An IND-Enabling Platform for CBRN Threat Protection via Transient, RNA-guided, Targeted Epigenome Editing In Vivo	Whitehead Institute	20-1996-0102		\$70,000
12.910	Biased agonists as rapidly acting neuropsychiatric drugs	University of North Carolina at Chapel Hill	5117494 / HR00112020029		\$1,219,770
12.910	BIGMAPS: Brain Imaging for Global Motifs of Activity Pattern and Structure NeuroFAST		W911NF-14-2-0013		-\$11,501
12.910	Decentralized Tactical Modular Teaming for Real-World UAS Networks		D18AP00064		\$48,735
12.910	Electrogenic Regulation of Sleep Biomolecules for Circadian Cycle Adjustment		FA8650-21-2-7121		\$139,861
12.910	Engineering a plant chassis for rapid and scalable production of small molecule therapeutics		D18AP00046		\$457
12.910	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparatus		HR00112020030/HR0011152585	\$41,499	\$250,274
12.910	Floquet Phases - A New Resource for Quantum Devices	Princeton University	SUB00000345		\$147,966
12.910	High-Speed DACs for Digital Arrays in Digital Process Technology		FA8650-19-1-7995		\$335,882
12.910	Multi-modal Open World Grounded Learning and Inference (MOWGLI)	University of Southern California	125037483		\$402,604
12.910	N3 CENTAUR	Palo Alto Research Center, Inc.	P314996, P.Khuri-Yakub (PKY)		\$17,032
12.910	N3 CENTAUR	Palo Alto Research Center, Inc.	P314996, K.Pauly (KBP)		\$118,503
12.910	N3 CENTAUR	Palo Alto Research Center, Inc.	P314996, S.Baccus (SAB)		\$42,771
12.910	Nonlinear Nanophotonics for Visible-Emission Lasers (NOVEL)	University of Colorado, Boulder	1559924		\$14,205
12.910	PIPES	University Of Pennsylvania	Sub 577443/PO 4724447/583232		\$303,810
12.910	Resonant Beam Accelerometer		N66001-16-1-4023		\$76,671
12.910	Rewriting the Rules of Thermal Emission via Parametric Microphotonic Design	University of Southern California	108725131/PO10724755		\$114,240
12.910	Stanford Encapsulated Microsystems for Precision Navigation and Timing		N66001-14-1-4026		-\$436
12.910	Topological Insulators -- Solid State Chemistry, New Materials and Properties	University of California, Los Angeles	0157 G PA103/4-442651-WK-21263		-\$196
12.RD	Aberration-correcting Topologically Optimized Metasurface (ATOM)	Physical Sciences, Inc.	SC 8082-170221-008-46		\$39,156
12.RD	Applications and Systems driven Center for Energy-Efficient Integrated NanoTechnologies (ASCENT)	University of Notre Dame	203278SU-POP		\$331,218

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
12.RD	APPRAISE Validation Study	Applied Research Associates, Inc.	S-200412-D00154-Stanford		\$230,618
12.RD	Architecture and Analysis for High-Assurance Autonomy	Rockwell Collins	PO-4506642848		\$550,431
12.RD	Autonomous Cyber Security Orchestration: Large Scale Representation Learning and Planning	Johns Hopkins University Applied Physics Laboratory	Contract163370/ProjFFPB0_Y2BX 4		\$99,070
12.RD	Building machine common sense the human way	International Business Machines Corporation	CW3013548 / PO #4700221071		\$267,247
12.RD	Cognitio Veritas: Scaling the Cognitive Foundations of Online Social Behavior	University of Virginia	GG12204 PO#2169947		\$11,312
12.RD	ComSenTer: A Center for Converged TeraHertz Communications and Sensing	University of California, Santa Barbara	KK1842		\$367,275
12.RD	Control of Disease Models over Realistic Contact Networks	MIT-Lincoln Laboratory (DOD)	7000490817		\$82,732
12.RD	Depth Insensitive Pressure/Vector Sensor Arrays	Intelligent Fiber Optic Systems Corporation	120933 - Supplement		\$24,993
12.RD	Design of High Confidence LEARNING-Enabled Systems (HICON-LEARN)	University of California, Berkeley	00010131 / PO BB01368465		\$278,995
12.RD	Development of a Rapidly-acting Preventative Therapy for Influenza	DNARx, LLC	HR0011940279		\$250,711
12.RD	Earthquake Signal Characterization Using Deep-Residual Convolutional-Recurrent Networks		FA9453-19-C-0073		\$92,388
12.RD	End-to-end Machinery for Proving Highly Sensitive Application-oriented Statements In ZER0-knowledge (EMPHASIZE)	SRI International	47137		\$255,831
12.RD	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparatus		HR00112020030/HR0011046008	\$855,017	\$1,331,794
12.RD	Entangled short wave infrared (En-SWIR) photon source	Sivananthan Laboratories	0961-21-SSU-0001		\$21,132
12.RD	ERGO: Exploiting Risk-taking in Group Operations	MIT-Lincoln Laboratory (DOD)	P.O. 7000443045		\$125,350
12.RD	Exploring new topological materials and interfaces for advanced SOT-MRAM	University of Notre Dame	203278SU-Wang		\$378,608
12.RD	Galois Verified Application	Galois, Inc.	2017-010		\$171,070
12.RD	HERMES: Hybrid Efficient Reasoning Methods for Explainable and Scalable formal methods	Raytheon Technologies Corporation	1239372		-\$4,377
12.RD	High-Speed Aero-Propulsion Integration Technology Development	ARCTOS Technology Solutions, LLC	212014.03.00.2019.00.05-C1		\$16,108
12.RD	Human Intent Aware Decision- Making Planning	MIT-Lincoln Laboratory (DOD)	7000441073		\$46,380
12.RD	Imprinted Topologically Optimized Metacorrector (ITOM)	Physical Sciences, Inc.	SC 10-03808-104398-46		\$831
12.RD	Integrated and Rapid Bacterial	Johns Hopkins University	12503 (PO: 2004336856)		\$118,830
12.RD	IPA for Jeffrey Hancock		198521		\$15,033
12.RD	JUMP ASCENT: 3D Integration of Non-volatile Memory for Memory-Intensive Computing	University of Notre Dame	203278SU-Wong		\$265,803
12.RD	Lipidomic discovery of human tears using desorption electrospray ionization mass spectrometry	UES	S-977-060-001		\$21,664
12.RD	Modular State-Adaptive Landmark Tracking (SALT)	Centauri, LLC	10578-2850-0511		\$10,024
12.RD	Monitoring the activity of 1 million individual neurons in awake behaving mammals		HR001118C0042		\$47,076
12.RD	MP-Pro: Rapid Prototyping Platform for Specialized Multi-Physics Simulation Software	Palo Alto Research Center, Inc.	P315877		\$157,699
12.RD	Multi-Component, Co-Deposition of Patterned Films and Nanoparticles	Surfx Technologies LLC	SFX-01-2021		\$12,165
12.RD	Natural language Engagement of Malicious Entities through a Social Interaction Service (NEMESIS)	SRI International	PO29255		\$20,836
12.RD	Natural language Engagement of Malicious Entities through a Social Interaction Service (NEMESIS)	SRI International	PO41532	\$77,005	\$214,204
12.RD	Optimizing hip, knee and ankle exoskeleton assistance during walking and running at various speeds, grades and loads		W911QY18C0140	\$45,249	\$245,937
12.RD	Phase Adaptation for Estimating Optical Nix (PAEON)	Princeton University	SUB0000438		\$147,107
12.RD	Preservation and Restoration of Vision In Optic Neuropathies: Porcine traumatic model for advancing neuroprotective and regenerative therapies towards human testing.	Medical Technology Enterprise Consortium	MTEC1802OpticNerve0005	\$322,398	\$1,252,567
12.RD	Prevention of Sediment Recontamination by Improved BMPs to Remove Organic and Metal Contaminants from Stormwater Runoff		W912HQ18C0047	\$154,730	\$185,689
12.RD	Research Project in Applied Statistics		H98230-19-C-0515		\$79,581
12.RD	Research to Support the Development and Testing of Novel Sensor for Temperature in High-Pressure Air	ARCTOS Technology Solutions, LLC	187900001103C1:FA865014D2411		\$65,490
12.RD	Revolutionizing Computing Systems through Dense and Fine-grained Monolithic 3D Integration	Massachusetts Institute of Technology	S4632-007/PO216909		\$1,580,373
12.RD	Seafloor Cable Disturbance Detection Spanning Ocean Basins	University Of Washington	UWSC11926 / BPO 48663		\$235,293
12.RD	Securing our National Internet Infrastructure: Using measurement, control, and verification for closed-loop control networks		HR001120C0107	\$8,812,292	\$10,456,279
12.RD	SPO 134787 The Broad Band Receiver (BBR) Instrument on the Demonstrations and Science Experiments (DSX) Spacecraft		FA9453-18-C-0057		\$332,113
12.RD	STR IARPA Subcontract	Systems & Technology Research, LLC	2020-0072 / 2021-2011000004		\$114,308
12.RD	The Future of Flight	Exosonic Inc.	AF19B-T001/Alonso SPO 172465		\$104,987
12.RD	Tourniquet Master Training System for Junctional and Inguinal Hemorrhage Control Devices (TMT)	Charles River Analytics Inc.	SC1701903		-\$206
12.RD	Unmanned Aircraft Collision Avoidance: Coordination Strategies and Policy Representation	MIT-Lincoln Laboratory (DOD)	7000335010		\$40,715
12.RD	WMD ECHO Detector	Icahn School of Medicine at Mount Sinai	0258-A061-4609		\$142,151
<b>Department of Education</b>					<b>\$2,112,087</b>
84.305	121221 UCB - IES Next Generation Science Standards	University of California, Berkeley	00009173/PO BB00774256		-\$1,282
84.305	A behavioral intervention to increase degree attainment among near completers	University of Virginia	GM10155 PO #2108287		\$41,228
84.305A	A Scalable Growth Mindset Intervention to Raise Achievement and Persistence in Community College		R305A150253		\$108,958
84.305A	Evaluating the Efficacy of the CLAVES Intervention: An Intervention Focused on Comprehension, Academic Language, and Vocabulary for English Learner Students		R305A200095	\$78,768	\$385,710
84.305A	Peer-assisted writing strategies: Efficacy (PAWS: Efficacy).	Georgia State University	SP00013807-01		\$93,320
84.305A	Uprooting children: The risks and rewards of mobility for vulnerable students in California's public schools	University of California, Riverside	S-001183		\$20,387
84.305E	Beyond Triage: A Randomized Experiment in Sustained Pre-College Advising		R305E130009		\$61,446
84.324A	An Efficacy Trial to Evaluate Supporting Paraprofessionals by Advancing Reading Intervention Knowledge and Skill (SPARK)		R324A190240	\$796,213	\$889,499
84.325D	Leadership in Research and Teacher Preparation for System-wide Inclusive Education		H325D190042	\$125,027	\$304,397
84.326M	A Design Thinking Approach_173161_DBI		H326M190010	\$52,077	\$208,424
<b>Department of Energy</b>					<b>\$28,974,748</b>
81.000	Center for Computational Study of Excited-State Phenomena in Energy Materials (C2SEPEM)	Lawrence Berkeley National Laboratory	7581670		\$83,839
81.000	Demand response potential from the agricultural sector in India	Lawrence Berkeley National Laboratory	7571271		\$41,550
81.000	Developing Real-time Data Assimilation of Soil Moisture Sensor Data	Lawrence Berkeley National Laboratory	7556094		\$27,758
81.000	Developing Surrogate Models for Reactive Transport Models	Lawrence Berkeley National Laboratory	7556178		\$90,172

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
81.000	EGS Collab SIGMA-V	Lawrence Berkeley National Laboratory	7352162		\$78,734
81.000	NAWI - Energy Innovation Hub	Lawrence Berkeley National Laboratory	7539834		\$229,679
81.000	Thermal flow testing for SIGMA-V	Lawrence Berkeley National Laboratory	7348695		\$59,032
81.036	Energy Modeling Forum		E10002997		\$265,404
81.049	Experiment Study of Neutrino Properties		SC0017970		\$510,615
81.049	126446_EPTA Seg2-EXO-200/nEXO Gratta		CXLD - see SDDCG		-\$150
81.049	152053 Merced DOE Applying Deep Learning Methods to Develop New Models of Charge Transfer, Nonadiabatic Dynamics, and Nonlinear Spectroscopy in the Condensed Phase	University of California, Merced	E252GXA352		\$104,096
81.049	A Complete Machine-Learning-Based Workflow to Illuminate Earthquake Processes		DE-SC0020445		\$311,958
81.049	A Multi-Model, Multi-Scale Research Program in Stressors, Responses, and Coupled Systems Dynamics at the Energy-Water-Land Nexus		SC0016162	\$2,073,885	\$2,454,583
81.049	Carbonate Management to Enable Energy- and Carbon-Efficient CO2 Electrolysis		DE-SC0021633		\$97,305
81.049	Carbonate-Catalyzed CO2 Insertion Into Hydrocarbon C-H Bonds		DE-SC0020394		\$314,919
81.049	Center for Mechanistic Control of Water-Hydrocarbon-Rock Interactions in Unconventional and Tight Oil Formations		SC0019165	\$1,289,966	\$2,684,007
81.049	Collaborative Research: Unraveling the Physics Associated with the Production of Extremely Dense Plasma States of Microscale Nanosecond-pulsed Discharges		DE-SC0020068		\$70,208
81.049	Conformational and Chemical Dynamics of Single Proteins in Solution by Suppression of Brownian Motion		ER15892		\$289,419
81.049	Controlled synthesis of solid-state quantum emitter arrays for quantum computing and simulation		DE-SC0020115	\$521,416	\$970,435
81.049	Deciphering controls on metal migration within floodplains: The critical role of redox environments on metal-organic complexes		DE-SC0020205	\$88,203	\$242,798
81.049	Defining the Minimal Set of Microbial Genes Required for Valorization of Lignin Biomass		DE-SC0014112		\$139,328
81.049	Deformation of Nano-Metallic Glasses Made using Colloidal Synthesis		DE-SC0021075		\$164,610
81.049	Development of a molecularly informed biogeochemical framework for reactive transport modeling of subsurface carbon inventories, transformations and fluxes		SC0018155	\$1,860	\$141,236
81.049	Development of high-throughput light-sheet fluorescence lifetime microscopy for 3D functional imaging of metabolic pathways in plants and microorganisms		DE-SC0021976		\$3,611
81.049	Discovering innovations in stress tolerance through comparative gene regulatory network analysis and cell-type specific expression maps		DE-SC0020358	\$709,829	\$1,087,011
81.049	Distributed and Heterogeneous Tensor Algebra Compiler (TACO)	Extreme Scale Solutions, LLC	208591		\$25,308
81.049	DOE Phase II SBIR Topic 22(d) - Numerical Model Development for Supercritical CO2 Oxy- Combustion	Combustion Science & Engineering Inc	173197		\$203,552
81.049	Does mycorrhizal symbiosis determine the climate niche for Populus as a bioenergy feedstock?		DE-SC0016097		\$108,138
81.049	Duality and quantum information theory as a window into strongly interacting systems	University of California, Riverside	S-001217		\$149,052
81.049	Early Career DOE: Quantum Black Holes and Wormholes		DE-SC0021085		\$31,739
81.049	Enabling Structural Biology at Physiological Temperatures - New Tools for Sample Preparation, Transport and Data Collection at Controlled Humidity	Crystal Positioning Systems, Inc.	167859- DE-SC0020474		\$2,022
81.049	Frontiers in Quantum Metrology and Transduction		DE-SC0019174		\$117,620
81.049	Fundamental aspects of Spacetime and Quantum Fields		SC0018134		\$120,108
81.049	Kinetic effects on self-organization in low-temperature magnetized plasmas		DE-SC0020623		\$79,168
81.049	Light-Material Interactions in Energy Conversion	California Institute of Technology	S390426 (67N1095803)		-\$1,545
81.049	Multiscale dynamics of reactive fronts in the subsurface		DE-SC0019075		\$6,366
81.049	Nanophotonics-Enhanced Solar Cells		ER46426		\$292,255
81.049	PhILMs: Collaboratory on Mathematics and Physics-Informed Learning Machines for Multiscale and Multiphysics Problems		DE-SC0019205		\$276,337
81.049	Photoinduced Electron Transfer and Electronic Exc		ER13251		\$257,926
81.049	Photonics at Thermodynamic Limits		DE-SC0019140	\$1,112,970	\$2,587,852
81.049	Probing Strong-field Effects in QED on FACET-II		DE-SC0020076		\$225,964
81.049	Probing Supercritical Phase Transition using Ultrafast X-ray Diagnostics		DE-SC0021129		\$124,065
81.049	Research in Integrated Assessment Inter-Model Development, Testing and Diagnostics		SC0005171	-\$106	-\$106
81.049	Response Of Subsurface Nitrogen-Cycling Microbial Communities To Environmental Fluctuations		DE-SC0019119		\$232,687
81.049	Scanning Quantum Gas Atom Chip Microscopy of Strongly Correlated and Topologically Nontrivial Materials		DE-SC0012338		-\$235
81.049	Selective Catalytic Oxidations: Opportunities and Challenges for Selective Conversion of Renewable Resources		SC0018168		\$15,122
81.049	Spin Functionality Through Complex Oxide Heteroepitaxy		SC0008505		\$118,821
81.049	Studies of High Energy Density Discharge and Laser-Driven Deflagrating Plasma Stagnations		DE-SC0021255		\$82,166
81.049	Studies Of Surface Reaction Mechanisms In Atomic Layer Deposition		SC0004782		\$161,730
81.049	Task I: Dark Matter Search Experiments: Supercdms Soudan And Supercdms Snolab Task II: Experimental Study Of Neutrino Properties: Exo-200 And Nexo		DE-SC0009841		\$217,775
81.049	The Center for Enhanced Nanofluidic Transport (CENT)	Massachusetts Institute of Technology	S4687 - PO 242245		\$209,093
81.049	The Geometry and Flow of Quantum Information: From Quantum Gravity to Quantum Technology	University of California, Berkeley	00010057; DE-SC0019380		\$128,707
81.049	The Non-Equilibrium Quantum Frontier.		SC0021111		\$142,628
81.049	Thermal Activation in Dislocation Dynamics of Face-Centered Cubic Metals		SC0010412		\$148,401
81.049	Three-Invariant Non-Coaxial Elastoplastic Constitutive Modeling and Its Implications on the Localization Properties of Rocks		ER15454		\$36,222
81.049	Tough Errors Are no Match (TEAM): Optimizing the quantum compiler for noise resilience		DE-SC0020377		\$134,340
81.049	Tuning Organic Semiconductor Packing and Morphology through Non-equilibrium Solution Processing		SC0016523		\$208,192
81.049	Ultra Materials for a Resilient, Smart Electricity Grid	Arizona State University	ASU/B00000682		\$136,130
81.049	Unraveling the links between molecular structure, microstructure, delocalization and charge transport in new high-performance semiconducting polymers	University Of Washington	UWSC11264 / BPO #41613		\$227,227
81.049	Using Systems Approaches to Improve Photosynthesis and Water Use Efficiency in Sorghum	Donald Danforth Plant Science Center	23207-S		\$141,449
81.057	Trace Element Sampling and Partitioning Modeling to Estimate Wastewater Composition and Treatment Performance at Coal Generators		DE-FE0031646		\$46,325
81.086	Development of High-Fidelity and Efficient Modeling Capabilities for Enabling Co-Optimization of Fuels and Multi-Mode Engines		DE-EE0008875	\$45,578	\$109,981
81.086	Toward Drilling a Perfect Geothermal Well	Oregon State University	G0182A-D		\$81,288
81.087	Accelerated Scaling to Rapid Open-Air Fabrication of Durable Perovskite Solar Modules		DE-EE0008559		\$624,308
81.087	Cloud Fusion of Big Data and Multi-Physics Models using Machine Learning for Discovery, Exploration and Development of Hidden Geothermal Resources	Los Alamos National Laboratories, University of California	580304		\$86,805
81.087	Low Cost Desalination Using Nanophotonics Enhanced Direct Solar Membrane Distillation	Rice University	RI14124		\$92,462
81.087	Novel chalcopyrites for advanced photoelectrochemical water-splitting	University of Nevada, Las Vegas	GR06925/DE-EE0008085		\$12,097
81.087	Perovskite on Silicon Tandem Solar Cells		DE-EE0008167	\$151,244	\$234,090
81.087	Protective catalyst systems on III-V and Si-based Semiconductors for Efficient, Durable Photoelectrochemical Water Splitting Devices		DE-EE0008084		\$45,662
81.087	Solar Upconversion with Metal-Enhanced Bimolecular Complexes		DE-EE0005331		-\$2,341

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
81.087	UC/CHINA Clean Energy Research Center for Water-Energy Solutions and Technologies (CERC WET)	University of California, Irvine	2019-1245		\$174,398
81.089	A Field Study of the Stimulated Reservoir Volume, Detailed Fracture Characteristics, and EOR Potential in the Eagle Ford Shale Formation.	Texas A&M University	M1802544		\$106,328
81.089	AOI-2a: A Modular System for Direct Conversion of Methane into Methanol via Photocatalysis		DE-FE0031867	\$160,827	\$382,989
81.089	CarbonSAFE Illinois Corridor Phase III	University of Illinois at Urbana Champaign	101914-18189		\$81,759
81.089	Western States Regional CCUS Deployment	New Mexico Institute of Mining and Technology	P0019857- 01		\$107,932
81.122	TrustDER: Trusted, Private and Scalable Coordination of Distributed Energy Resources		DE-OE0000919		\$381,576
81.124	Center for micromorphic multiphysics porous and particulate materials simulations within exascale computing workflows	University of Colorado, Boulder	1559907/PO1001466527		\$86,922
81.124	INSIEME: INtegrated Simulations using Exascale Multiphysics Ensembles		DE-NA0003968	\$188,610	\$2,105,568
81.124	Predictive Simulations of Particle Laden Turbulence in a Radiation Environment		NA0002373	-\$102	\$12,324
81.135	20 KV Gallium Nitride PN Diode Electro-Magnetic Pulse Arrestor for Grid Reliability		DE-AR0001006		\$281,445
81.135	Carbonhouse: A Scalable All-Carbon Building Logic Derived From Hydrocarbon Resources	Massachusetts Institute of Technology	S5082 - PO486618		\$2,228
81.135	Context-Aware Learning for Inverse Design in Photovoltaics	Iowa State University	022218B		\$261,598
81.135	Co-synthesis of Hydrogen and High-value Carbon Products from Methane Pyrolysis		DE-AR0001192		\$779,207
81.135	Disruptive Technology for Carbon Negative Commodity Biochemicals		DE-AR0001504		\$9,207
81.135	Energy efficient integrated photonic systems based on inverse design		DE-AR0001212		\$708,081
81.135	Exploring the Limits of Cooling for Extreme Heat Flux Applications:Data Centers and Power Electronics		DE-AR0001055	\$229,275	\$415,767
81.135	Machine learning based well design to enhance unconventional energy production (2107-1504)	Julia Computing, Inc.	DE-AR0001202-003		\$21,973
81.135	Open and Scalable Distributed Energy Resource Networks		DE-AR0000697		\$61,096
81.135	Robust Multifunctional Battery Chassis System		DE-AR0001151		\$624,605
81.135	Robust Multifunctional Structural Battery Chassis for Automotive Applications		DE-AR0000393		-\$471
81.135	Thermoacoustic Root Imaging, Biomass Analysis, and Characterization		DE-AR0000825		\$314,412
81.RD	Breakdown Mechanisms in AlGaIn-based PN Power Diodes	Sandia National Laboratories	PO 2161458/Master 1918121		\$36,445
81.RD	Characterization of turbulence in the ocean atmospheric boundary layer for offshore wind energy production	Lawrence Livermore National Laboratory	B643364		\$100,703
81.RD	Climate Specific EVA Adhesion Degradation Model	National Renewable Energy Laboratory	XDC-9-92244-01		\$148,956
81.RD	Combining Domain Expertise and Machine Learning to Enable Practical, Low-Cost Infrared Imaging with Compressive Sensing		IC Postdoc Research Fellowship		\$16,596
81.RD	Continuation of nEXO R&D by the Stanford Physics Dept. Group	Lawrence Livermore National Laboratory	B647311		\$13,266
81.RD	Continuation of nEXO R&D: hardware development efforts at Stanford University	Lawrence Livermore National Laboratory	B638648		\$3,399
81.RD	Continuation of nEXO R&D: hardware development efforts at Stanford University	Lawrence Livermore National Laboratory	B643563		\$147,000
81.RD	Determining Exact RANS Operators with the Macroscopic Forcing Method	Lawrence Livermore National Laboratory	B645258		\$32,760
81.RD	Development and Implementation of Eulerian Strength Model for Multi-Material Elastic-Plastic Flow	Lawrence Livermore National Laboratory	B625957		\$303,240
81.RD	DOE's Exascale Computing Project (ECP)	Triad National Security, LLC	626908		\$11,331
81.RD	Exascale Computing Project (ECP) ExaSGD: Optimizing Stochastic Grid Dynamics at Exascale.	Pacific Northwest National Laboratory	500958		\$93,613
81.RD	Fast and Robust Hierarchical Matrix Solvers	Sandia National Laboratories	1759540 - Master 918800		-\$25
81.RD	Fundamental physics of hypersonic laminar-turbulent transition	Sandia National Laboratories	PO 1987733 // Master 1918121		\$193,513
81.RD	Legion Applications	Triad National Security, LLC	502266		\$51,839
81.RD	Low-Cost High-Reliability Thermoelectrics for Waste Heat Conversion	Lawrence Berkeley National Laboratory	7466483		\$300,687
81.RD	Measuring Toxin Activity and Pathogens in Unknown Samples	Pacific Northwest National Laboratory	543042		\$104,684
81.RD	Metasurface Optics for Two Photon Nanoscale Printing	Lawrence Livermore National Laboratory	B643414		\$29,996
81.RD	Modular Microbial Electromethanogenesis Flow Reactor for Biogas Upgrading eXCHANGE Control Number: LO45-1517	Lawrence Livermore National Laboratory	B631127		\$143,100
81.RD	nEXO large area SIPM readout test tile	Lawrence Livermore National Laboratory	B637224		-\$5
81.RD	Sandia National Laboratories/Stanford University Excellence in Engineering Assistantship Program	Sandia National Laboratories	Purchase Order 1385856		\$467
81.RD	Scalable Integrated Infrastructure Planning APUP	National Renewable Energy Laboratory	UGA-0-41028-09		\$78,625
81.RD	Super Emitters of Methane detection using Aircraft, Towers, and In situ Observational Network (SUMMATION)	Lawrence Berkeley National Laboratory	7532774		\$12,141
81.RD	Uncertainty estimation for BHR predictions of variable density flows	Triad National Security, LLC	536415		\$259,255
81.RD	Uncommon Dialogue Phase II-US Hydropower: Climate Solution and Conservation Challenge	Battelle Memorial Institute	574972		\$26,456
81.RD	Variable Property Mixing in Transitional and Turbulent Regimes	Los Alamos National Laboratories, University of California	518570		\$146,382
81.RD	Wet Cooling Tower Water Consumption During Off-Design Operation -	KeyLogic Systems, Inc.	5000-410-001		\$7,290
<b>Department of Health &amp; Human Services</b>					<b>\$600,690,020</b>
93.073	California Center Of Bd-Steps II - Finding Causes And Preventives Of Birth Defects		18U01DD001226		\$777,602
93.077	Integrated Health, Behavioral and Economic Research on Current and Emerging Tobacco	University of California, San Francisco	109848c		\$145,468
93.080	CDC Community Counts Bleeding Disorders Surveillance Project	Center for Inherited Blood Disorders (CIBD)	CIBDIX2020CDC-STAN-01		\$16,067
93.080	Characterizing the Complications Associated with Therapeutic Blood Transfusions for Hemoglobinopathies	University of California, San Francisco	120468c		\$7,000
93.080	Public Health Surveillance for the Prevention of Complications of Bleeding and Clotting Disorders	Center for Inherited Blood Disorders (CIBD)	CIBDIX2015CDC-STAN-5		\$2,878
93.103	Adapting a Measure of Heart Failure to an Adolescent Population	University of California, San Francisco	110808c // Master 93083c		\$7,194
93.103	An Unbiased Analysis of Identification and Assessment of Cas9/gRNA Potential Off-Target Sites in Clinical Development of Ex Vivo Manufactured Genome Edited Cell Products	University of California, San Francisco	108463c // 98033c (master)		\$61,158
93.103	An Unbiased Analysis of Identification and Assessment of Cas9/gRNA Potential Off-Target Sites in Clinical Development of Ex Vivo Manufactured Genome Edited Cell Products	University of California, San Francisco	108463c // Master 98033c		-\$657
93.103	Assessment of Patient Tolerance for Risk Associated with High Intensity Focused Ultrasound (HIFU) for the Ablation of Prostate Tissue (PI: Geoffrey Sonn)	University of California, San Francisco	TO 121543c // Master 98033c		\$60,545
93.103	Characterizing Risk-Benefit Tradeoff in Opioid-based Chronic Pain Treatment	University of California, San Francisco	116768c // Master 98033c		\$33,496
93.103	Characterizing Risk-Benefit Tradeoff in Opioid-based Chronic Pain Treatment	University of California, San Francisco	TO 116768c // Master 98033c		\$173,254
93.103	Creating a Framework for a National Adaptive Platform Trial to Evaluate Pediatric Medical Devices (PI: Christopher Almond)	University of California, San Francisco	122928c // Master 98033c		\$48,151



**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.103	Evaluation of the Impact of Genetic Variability on Drug Target Interactions using Structural Bioinformatics	University of California, San Francisco	11891sc // Master 9803sc		\$121
93.103	Expanding FDA's Opioids Systems Model to Conduct Economic Evaluations and Outcome Analyses of National Opioid Policies	Massachusetts General Hospital	237255		\$20,096
93.103	HYDRA: A federated computational infrastructure to enable large scale precision medicine (PI: Snehit Prabhu)	University of California, San Francisco	11765sc // Master 9803sc		\$139,746
93.103	Identifying Genetic Mechanisms of Doxorubicin-Induced Cardiotoxicity: Project #49 (PI: Joseph Wu)	University of California, San Francisco	11936sc // Master 9803sc		\$65,185
93.103	Identifying Genetic Mechanisms of Doxorubicin-Induced Cardiotoxicity: Project #49 (PI: Joseph Wu)	University of California, San Francisco	TO 11936sc // Master 9803sc		\$27,692
93.103	Phase 2 Study of Sildenafil for the Treatment of Lymphatic Malformations		RFD004372A		\$58,276
93.103	Phase 3 Trial of DCA in PDC Deficiency IND 028,625 (02/04/2015)	University of Florida	00121236/UFOCRO0012073		\$7,679
93.103	Pnp Plans For Phase 2 Study	Emory University	A343241		\$170,718
93.103	Project #33 - Isolating Exosomes using a novel ExoTIC device from HIV-infected patient	University of California, San Francisco	11292sc // Master 9803sc		\$5,443
93.103	Project #33 - Isolating Exosomes using a novel ExoTIC device from HIV-infected patient	University of California, San Francisco	Master 9803SC // TO 11292sc		\$32,951
93.103	Project #38 - Development of New and Innovative Methods for Automated Reporting for CBER-Regulated Biological Products (PI: Tina Hernandez-Boussard)	University of California, San Francisco	11672sc		\$187,985
93.103	Project 37 - Russ Altman: Comprehensive Assessment of Sex-Differential Smoking-related Effects in Publicly Available Gene Expression (Year 4)	University of California, San Francisco	11751sc		\$3,909
93.103	Project 37 - Russ Altman: Comprehensive Assessment of Sex-Differential Smoking-related Effects in Publicly Available Gene Expression (Year 4)	University of California, San Francisco	11751sc // Master 9803sc		-\$130
93.103	PROJECT 42 - TOBIAS: A clinical decision support tool for next generation sequencing dianosticians (PI: Snehit Prabhu)	University of California, San Francisco	11764sc // Master 9803sc		\$9,456
93.103	PROJECT 42 - TOBIAS: A clinical decision support tool for next generation sequencing dianosticians (PI: Snehit Prabhu)	University of California, San Francisco	Master 9803sc // TO 11764sc		\$132,227
93.103	Renal Impairment in New Drug Development (PI Timothy Meyer)	University of California, San Francisco	TO 12385sc // master 9803sc	\$33,491	\$33,491
93.103	Rubin Project 48 - Data science methods for post-marketing surveillance of AI diagnostic tools and algorithm-based therapeutics - Project PI: Daniel Rubin	University of California, San Francisco	11921sc // Master 9803sc		\$163,645
93.103	Tissue Chips for Multipotent Stromal Cell Manufacturing (PI: Ngan Huang/Stanford)	University of California, San Francisco	11365sc // Master 9803sc		\$62,734
93.103	Transcriptomic Atlas of Endothelial Injuries Induced by Cardiotoxic Drugs	Health and Environmental Sciences Institute	5 U01 FDO06676-02		\$24,627
93.103	UCSF-Stanford Center of Excellence in Regulatory Science	University of California, San Francisco	10192sc // Master 9803sc		-\$7
93.103	UCSF-Stanford Center of Excellence in Regulatory Science	University of California, San Francisco	10236sc // Master 9803sc		\$102,527
93.103	UCSF-Stanford Center of Excellence in Regulatory Science	University of California, San Francisco	9857sc // Master 9803sc		-\$121
93.103	UCSF-Stanford Center of Excellence in Regulatory Science	University of California, San Francisco	Master 9803sc // TO 10192sc		\$87,111
93.103	UCSF-Stanford Center of Excellence in Regulatory Science	University of California, San Francisco	Master 9803sc // TO 9857sc		\$46,176
93.103	UCSF-Stanford Center of Excellence in Regulatory Science Project# 21 Defining Substantial Evidence Under the 21st Century Cures Act	University of California, San Francisco	10552sc // Master 9803sc		\$20,227
93.103	UCSF-Stanford Pediatric Device Consortium	University of California, San Francisco	11168sc		\$332,839
93.103	Using system dynamics to enhance the FDA's opioids systems model and address the ongoing crisis	Massachusetts General Hospital	235212		\$1,089
93.107	California Area Health Education Center (Federal AHEC)	University of California, San Francisco	10384sc		\$31,215
93.110	Alliance for Innovation ion Maternal Health (AIM) ACOG	American College of Obstetricians and Gynecologists	140935		\$1,074
93.110	Alliance for Innovation ion Maternal Health (AIM) ACOG	American College of Obstetricians and Gynecologists	140935/UC4MC28042		\$9,147
93.110	Developmental-Behavioral Pediatrics Training Program		T77MC09796		\$195,020
93.110	Western States Regional Hemophilia Network	Center for Inherited Blood Disorders (CIBD)	CIBDIX2012HRSA-STAN-09		\$27,049
93.113	COVID-19 - Interaction between genetic, lifestyle and environmental factors determining circulating angiotensin converting enzyme 2 protein expression: implications for the severity of COVID-19infection		RES033049A		\$36,751
93.113	Direct measurement of gene-environment interactions by high-throughput precision genome editing		FES030282A		\$29,533
93.113	Environmental, Social and Biological Factors and Disparities in Preterm Birth	University of California, San Francisco	10697sc		\$36,748
93.113	Immune Tolerance Dysfunction in Pregnancy due to Ambient Air Pollution Exposure		RES032253A	\$50,738	\$369,047
93.113	Integrating the Exposome into Longitudinal Multiomics Profiling		KES028825A		\$169,301
93.113	Multi-scale data integration frameworks to improve cancer outcomes		KES026832A		\$55,021
93.113	Regulation of the DNA damage Response		RES016486E		\$460,190
93.121	Genetic Predictors of Ameloblastoma Behavior		RDE026502A	\$15,093	\$345,868
93.121	Candida Genome Database		RDE015873D		\$419,833
93.121	Cellular and Mechanical Mechanisms Regulating Mandibular Distraction Osteogenesis		RDE026730A		\$377,319
93.121	Center for Dental, Oral, and Craniofacial Tissue and Organ Regeneration (C-DOCTOR)	University of California, San Francisco	10058sc		\$74,640
93.121	Center for Dental, Oral, and Craniofacial Tissue and Organ Regeneration (C-DOCTOR)	University of Southern California	132136667 / U24 DE029463		\$48,563
93.121	Center for Dental, Oral, and Craniofacial Tissue and Organ Regeneration (C-DOCTOR)	University of Southern California	SCON-00002251 / U24 DE029463		\$5,205
93.121	Characterizing head and neck tumor neoantigens and T cells: looking beyond the usual suspects		RDE027750A		\$532,240
93.121	Dissecting motor cortex circuits underlying chronic pain relief		FDE030003A		\$62,726
93.121	Emotion Dysregulation and Sleep-Time Masticatory Muscle Activity in Sleep Bruxism		RDE026771A		\$647,975
93.121	Identifying a Systemic Immune Signature of Periodontal Disease with Mass Cytometry		RDE027728A		\$3,439
93.121	Identifying the human skeletal stem cell		RDE027323A		\$464,028
93.121	Irradiated head and neck cancer soft tissue reconstruction by fat transfer		RDE027346A		\$490,614
93.121	Mechanisms of Regeneration: Facial Nerve Injury and Repair		KDE028364A		\$166,892
93.121	Microribbon-based Scaffolds for Bone Repair		RDE024772A		\$16,853
93.121	Platform technology for detection of cancer-associated viruses in HIV patients		RDE024971A	\$22,990	\$39,612
93.121	Prevention of Scar Formation in the Skin using a Topical Focal Adhesion Kinase Inhibitor	University of Southern California	132236440 / U24 DE029463		\$691,886
93.121	Prevention of Scar Formation in the Skin using a Topical Focal Adhesion Kinase Inhibitor	University of Southern California	SCON-00002250 / U24 DE029463		\$265,128
93.121	Reprogramming the Tumor-Immune Interface in Oral Cancer		RDE030054A		\$535,404
93.121	Role of Wnt-responsive cells in oral mucosa homeostasis, injury, and malignancy		KDE028585A		\$36,180
93.121	The Genetic Architecture of Human Facial Morphology	University of Pittsburgh	CNVA00055576 (134310-4)		\$186,656
93.121	The role of Galectin-1 in shaping the immune suppressive landscape in head and neck cancer		RDE029672A		\$171,108
93.121	Transdermal deferoxamine to enhance fat graft retention for reconstruction of irradiated soft tissue defects	University of Southern California	132236343 / U24 DE029463		\$877,354

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.121	Transdermal deferoxamine to enhance fat graft retention for reconstruction of irradiated soft tissue defects	University of Southern California	SCON-00002249 / U24 DE029463		\$191,312
93.143	UNM Metal Exposure Toxicity Assessment on Tribal Lands in the Southwest (METALS) Superfund Research Program (SRP)	University of New Mexico	3RDD9- 5		\$26,280
93.143	UNM Metal Exposure Toxicity Assessment on Tribal Lands in the Southwest (METALS) Superfund Research Program (SRP)	University of New Mexico	3RDD9- 6		\$17,157
93.157	Centers of Excellence		COE17		\$582,799
93.157	COVID-19 - Centers of Excellence COVID		T1N39160/20-COE-COVID-C3	\$35,000	\$134,539
93.172	Center for Multi and Trans-ethnic Mapping of Mendelian and Complex Disease	Icahn School of Medicine at Mount Sinai	0255-C687-4609 / U01 HG009080		\$111,162
93.172	i69123 (J1) Single Cell Transcriptomic and Genetic Diversity by Single Molecule Long Read Sequencing	University of Pennsylvania	580616 PO 4597768		\$146,445
93.172	A Data Coordinating Center for ENCODE		UHG009397A		\$4,477,885
93.172	A Pharmacogenomics Annotation Toolkit: PharmCAT	University of Pennsylvania	580332/U24HG010862/PO455716 2		\$323,484
93.172	Actionable Genetic Risk through Genotype-to-Phenotype Prediction	Scripps Research Institute	5-54344 / R01 HG010881		\$21,277
93.172	Alliance Central: A Platform for Sustainable development of next generation genome knowledgebases	California Institute of Technology	S454390		\$628,683
93.172	An integrated web interface for cloud-based computational reproducibility using theENCODE analysis pipeline architecture	XD Bio, Inc	168393		-\$3
93.172	Atlas of Regulatory Variants in Diseases (ARVID)		UHG010856A		\$700,679
93.172	Center for Personal Dynamic Regulomes		RHG007735B		\$2,844,491
93.172	Center for Sub-Cellular Genomics	University of Pennsylvania	4330379		-\$9,210
93.172	Center for Sub-Cellular Genomics	University of Pennsylvania	577453/PO4636437		\$224,580
93.172	Clinical Pharmacogenetics Implementation Consortium (CPIC)	St. Jude Children's Research Hospital	112350030-7940282		\$358,508
93.172	Clinical Pharmacogenetics Implementation Consortium (CPIC)	St. Jude Children's Research Hospital	112350031-7948062		\$219,130
93.172	Comparative Functional Genomics of Yeast		RHG010378A	\$204,271	\$571,960
93.172	Decoding the regulatory architecture of the human genome across cell types, individuals and disease		UHG009431A		\$844,315
93.172	Deep tensor genomic imputation	University Of Washington	UWSC12630 BPO55233		\$112,644
93.172	Development and application of new tools to identify repeat expansions in human diseases		KHG011467A		\$82,102
93.172	EDAC: ENCODE Data Analysis Center	University of Massachusetts	OSP2017188 / WA00959358		\$77,486
93.172	EDAC: ENCODE Data Analysis Center	University of Massachusetts	OSP2017188 / WA01069405		\$112,530
93.172	ELSI.hub: National Center for ELSI Resources and Analysis		UHG010733A	\$799,195	\$1,609,461
93.172	Enhancing open data sharing for functional genomics experiments: Measures to quantify genomic information leakage & file formats for privacy preservation	Yale University	GR111094 (CON-80002636)		\$110,311
93.172	Ethical challenges of whole genome sequencing in care of critically ill children		KHG008498A		\$130,706
93.172	Extended DNA synthesis using a library-based CRISPR/Cas9-engineered enzyme		RHG010413A		-\$8,145
93.172	Gene Ontology Consortium	University of Southern California	86275389 131517872 PO 50912036		\$191,063
93.172	Gene Ontology Consortium	University of Southern California	86275389; SCON-00002313		\$170,611
93.172	Genome wide identification and functional analysis of chromatin regulatory RNAs		RHG009909A		\$748,518
93.172	Genomic and Cellular Variation from Single Molecules and Cells	University of Pennsylvania	572789 PO 4410882		\$30,548
93.172	Genomic Database for the Yeast Saccharomyces		UHG001315F		\$830,146
93.172	Genomic Resource for the Yeast Saccharomyces		UHG001315G		\$523,720
93.172	Genomics Diversity Summer Program (GDSP) at Stanford		RHG010857A		\$208,361
93.172	High-throughput systematic characterization of regulatory element function		UHG009436A		\$1,275,489
93.172	Institutional Training Grant in Genome Science		THG000044F		\$1,094,786
93.172	Integrated Clinical and Transcriptomic Profiling to Characterize Disease Phenotype		KHG010061A		\$153,775
93.172	Integrating Ethics into Machine Learning for Precision Medicine		RHG010476A	\$94,281	\$391,935
93.172	Integration of functional data and GWAS to elucidate genetic basis of diseases		RHG008140B	\$268,752	\$577,458
93.172	K-mer indexing for pan genome reference annotation		UHG010963A		\$337,921
93.172	Learning Regulatory Drivers of Chromatin and Expression Dynamics during Nuclear Reprogramming		RHG009674A		\$44,551
93.172	Mapping enhancer-gene regulation in single cells to connect genetic variants to target genes and cell types		RHG011324A		\$641,017
93.172	New methods for constructing and evaluating polygenic scores		RHG011432A	\$39,025	\$421,651
93.172	New PharmGKB		UHG010615A		\$1,314,373
93.172	NHGRI Genome Sequencing Program Coordinating Center	Rutgers University	1375/U24HG008956/PO1324341		\$10,715
93.172	Orthocoding for Spatial Sequencing		RHG011231A		\$234,705
93.172	Population genetics for large-scale sequencing studies of diverse populations		RHG005855C	\$224,924	\$350,875
93.172	Production Center For Mapping Regulatory Regions Of The Human Genome		UHG009442A	\$594,206	\$4,067,887
93.172	R35 HG011292. Billy Lau		RHG011292A		\$446,583
93.172	RegulomeDB: A Resource for the Human Regulome		UHG009293B	\$347,166	\$725,135
93.172	Revealing Principles of Subcellular RNA Localization by Proximity Labeling		KHG010910A		\$111,002
93.172	Revolutionizing Biomedical And Clinical Research Through Innovative Technology		PHG000205G		-\$29,831
93.172	Software For Large-Scale Inference Of The Genetics Of Lifestyle Measures, Biomarkers, And Common And Rare Diseases		RHG010140A		\$448,631
93.172	Stanford/Baylor Clinic Genome Resource		UHG009649A	\$1,295,155	\$3,040,012
93.172	Statistical methods for gene regulatory analysis and single cell genomics		RHG010359A		\$386,010
93.172	Surfacing values in the economic evaluation of genomic sequencing for diagnosis of children with rare diseases		KHG011341A		\$50,113
93.172	Systematic identification of RNA sequences and protein components regulating circular RNA translation		KHG011475A		\$64,714
93.172	Systematic mapping and prediction of gene-enhancer connections		RHG009917B		\$130,878
93.172	The development and application of tools to characterize the level and function of RNA polymerase III transcription dynamics during cellular differentiation.		KHG010362A		\$120,651
93.172	The Ethics of Inclusion: Diversity in Precision Medicine Research	Columbia University	3(GG014890-01) / SAPO# G13771		\$21,731
93.172	The pursuit of genetic causal mechanisms		RHG010812A		\$88,435
93.172	The Stanford Training Program in ELSI Research		THG008953A		\$230,681
93.172	The Stanford Training Program in ELSI Research		THG008953B		\$64,455
93.172	Towards Robust Multiplex Genome Engineering Beyond CRISPR-Cas9		RHG011316A		\$493,011
93.172	Understanding the "flattening" of gene contributions to human complex trait habitability		FHG011202A		\$64,957
93.173	Advanced neural decoders for the restoration of communication		RDC014034A		-\$25
93.173	Advanced neural decoders for the restoration of communication		RDC014034A	\$13,489	\$13,489
93.173	Assembly of the Central Olfactory Networks in Drosophila		RDC005982E		\$277,656
93.173	Biological and clinical evaluation of the laryngeal mucus layer		RDC016126A		\$35,299

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.173	Characterization of the mechanotransduction complex in hair cells		RDC013572B		\$105,425
93.173	Clinician-scientist training program in otology		TDC015209A		\$193,392
93.173	Designing new aminoglycosides to alleviate inner ear toxicity		RDC014720A		\$463,148
93.173	Engaging new cognitive and motor signals to improve communication prostheses		RDC014034B	\$24,317	\$340,668
93.173	Function of LOXHD1 in mechanosensory hair cells		RDC016409A		\$482,901
93.173	Genetic Regulation of Cochlear Development	Baylor College of Medicine	7000000816		\$82,882
93.173	Hedgehog signaling in taste cell maintenance and regeneration		RDC016892A		\$312,024
93.173	High-resolution localization of the hair cell mechanotransduction channel components by immunogold-scanning electronic microscopy		RDC019457A		\$38,711
93.173	Language connectivity pathways and neuroplasticity in aphasic stroke patients		RDC013803B		\$95,410
93.173	Live imaging of neuron circuit assembly in Drosophila olfactory system		KDC018830A		\$105,807
93.173	Molecular analysis of Tmie in sensory hair cells		RDC017046B		\$559,532
93.173	Molecules and Mechanisms of Mammalian Hair Cell Mechanotransduction		RDC003896H		\$576,059
93.173	Mouse vestibular regeneration and function		RDC016919A	\$11,276	\$564,668
93.173	Neuroimaging Predictors of Pivotal Response Treatment in Young Children with Autism		RDC016089A		\$109,277
93.173	Pathways towards regenerating the mammalian cochlea		RDC013910A		\$47,962
93.173	Repair of Mechano-Electrical Transduction in Mammalian Auditory Hair Cells	University of Kentucky	3048112318-15-204/7800002420		\$11,817
93.173	Response of cochlear hair cells to pathological changes in the auditory system		RDC015201A		\$608,478
93.173	Signal transformations in the vestibulo-ocular circuit		FDC018458A		\$67,396
93.173	Speaker-listener coupling and brain dynamics during naturalistic verbal communication in children with autism		RDC017950A		\$159,758
93.173	Stanford OHNS Core Center		8-PDC010363A		\$1,307
93.173	Vestibular and Visual Control of Eye Movement		RDC004154D		\$191,915
93.173	Vestibular and Visual Control of Eye Movement		RDC004154E		\$23,603
93.213	A Feasibility Trial of a Group-Based Yoga Intervention for Chronic Pelvic Pain in Women	University of California, San Francisco	124078c		\$38,066
93.213	Defining and Reconstructing the Human Ancestral Microbiome		DAT009892A		\$522,032
93.213	Defining the Neuromolecular Signature of TMS-Augmented Hypnotic Analgesia in Fibromyalgia Syndrome		FAT010420A		\$37,767
93.213	Engineering Yeast for High Titer Production of Monoterpene Indole Alkaloid Natural Products	University of California, Los Angeles	0130 G WA210		\$174,957
93.213	Feasibility of At Home Telehealth Yoga for Treating Chronic Pain	Palo Alto Veterans Institute for Research	BAY0006-01/PO# 082917		\$8,487
93.213	Feasibility of At Home Telehealth Yoga for Treating Chronic Pain	Palo Alto Veterans Institute for Research	BAY0006-02/PO# BAY090425		\$14,714
93.213	Harnessing Mindset in 21st Century Healthcare		DAT009511A		\$452,442
93.213	HEAL Collaboratory Resource Coordinating Center: PRISM (U24)	Duke University	A03-2243		\$10,048
93.213	Innate Immune Mechanisms Contributing to Cancer Growth in Obesity		RCA262361A		\$90,983
93.213	Multicomic Signatures of Microbial Metabolites Following Prebiotic Fiber Supplementation		RAT010232A		\$549,433
93.213	Ovarian Cancer Survival in African-American Women	Emory University	A359283 / R01 CA237318		\$48,829
93.213	Predicting Analgesic Response to Acupuncture - A Practical Approach		KAT008477A		-\$1,196
93.213	Single Session Pain Catastrophizing Treatment: Comparative Efficacy & Mechanisms		RAT008551A		\$239,835
93.213	Stanford CAM Center for Chronic Back Pain		8-PAT006651A		-\$471
93.213	Synthetic biology tools for scalable production of medicinal plant terpenes		RAT010593A	\$460,194	\$785,999
93.225	Stanford Health Services Research		THS026128A		\$555,430
93.226	AHRQ P30 HS024453 Engineering Highly Reliable Learning Lab Renewal	Harvard University	115380-5109892		\$33,030
93.226	COVID-19 - 194943 AHRQ A Multi-Site Evaluation of Primary Care Accessibility and Utilization during COVID-19	MedStar Health Research Institute, Inc.	5002254336		\$83,719
93.226	COVID-19 - Developing an Evidence Base for Emergency Management in U.S. Hospitals	Harvard School of Public Health	115424-5119153		\$10,035
93.226	Development and validation of a prediction model to address physician burnout		KHS027837A		\$138,514
93.226	Effect of Regional Bypass Policies on Stroke Treatment in a National Sample of Medicare Beneficiaries.		RHS026207A		\$390,502
93.226	Identifying Optimal Pain Management for Elders		RHS027434A		\$57,493
93.226	Impact of standardized communication on human performance during resuscitation		KHS024161A		\$125,968
93.226	Implementation and Evaluation of a Video-based Prospective Feedback Intervention to Improve Antimicrobial Stewardship in Neonatal Intensive Care Units	Rand Corporation	SCON-00000225		\$63,756
93.226	Improving Opioid Use Disorder Treatment within the Veterans Health Administration		RHS027935A		\$39,655
93.226	Improving Quality of postoperative pain care through innovative use of electronic health records		RHS024096A		-\$3,417
93.226	Quantification of neonatal transport networks through network analysis: a new approach to studying neonatal regionalization	Beth Israel Deaconess Medical Center	01060852		\$13,630
93.226	Rheumatology Informatics System for Effectiveness Patient-Reported Outcome (RISE-PRO) Dissemination Project	University of California, San Francisco	11061sc / R18 HS025638		\$64,550
93.226	The Effects of Physician Organization on the Cost, Use and Outcomes of Health Care		RHS024535A	\$29,413	\$153,102
93.226	Understanding the role of physician group organizational capabilities and integration in PCOR Implementation	Rand Corporation	SCON-00000093		\$69,438
93.226	Variation in Provider Breast Cancer Surveillance Strategies Following Initial Treatment: Contribution of Patient and Provider Factors, Association with Outcomes, and Stakeholder Insights	University of California, San Francisco	11141sc		-\$105
93.233	Arousal circuitry and opiate-associated memories		RHL150566A		\$580,179
93.233	Examining the opposing roles of genetically distinct vagal afferents in sleep and wakefulness		FHL149458A		\$65,310
93.233	Fluorescent polysomnography and MCH neurogenetics		RHL151576A		\$431,364
93.233	Long-term trajectories of subjectively- and polysomnographically-assessed sleep patterns as predictors of neuroendocrine dysregulation and weight gain in adults	Utah State University	200979-414		\$7,925
93.233	Multi-Institutional Training in Genetic/Genomic Approaches to Sleep Disorders	University of Pennsylvania	580571/ RIS 51390/00		\$11,191
93.233	Multi-Institutional Training in Genetic/Genomic Approaches to Sleep Disorders	University of Pennsylvania	580871		\$105,501
93.233	Multi-Institutional Training in Genetic/Genomic Approaches to Sleep Disorders	University of Pennsylvania	580871/ RIS DOC ID 53754/00		\$44,897
93.233	Neuropeptide Cortistatin: A potential neocortical regulator of sleep homeostasis		FHL154792A		\$52,614
93.233	Stepped--caremanagement of insomnia co-occurring with sleep apnea	National Jewish Health	20107405_Stanford Sub		\$307,364
93.242	(FH) Functional Heterogeneity of Hypocretin neurons		RMH116470A	\$77,360	\$396,925
93.242	1/2 Genetics at an extreme: an efficient genomic study of individuals with clinically severe major depression receiving ECT	National Network of Depression Centers	180107		\$20,892
93.242	1/2 Genomic Strategies to Identify High-Impact Psychiatric Risk Variants	University of California, Los Angeles	2000 G YC221		-\$910
93.242	2/2-Mechanism of Antidepressant-Related Dysfunctional Arousal in High-Risk Youth		RMH105469A		\$70,060
93.242	A Big Data Approach Toward the Development of a New Quantitative Measure of Restricted and Repetitive Behaviors		RMH121876A	\$18,939	\$221,091
93.242	A Biobehavioral Research Training Program		TMH019938F		\$262,245
93.242	A Latin American biobank for large-scale genetics research on severe mental illness	University of California, Los Angeles	2000 G YF850 / R01 MH123157		\$6,355
93.242	A Novel Cognitive Reappraisal Intervention for Suicide Prevention	Cornell University	194138-2		-\$3
93.242	A Novel Cognitive Reappraisal Intervention for Suicide Prevention	Cornell University	204406-2		\$11,996

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

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93.242	A Novel Neuromonitoring Guided Cognitive Intervention for Targeted Enhancement of Working Memory		RMH119289A		\$303,053
93.242	A Novel Use of a Sleep Intervention to Target the Emotion Regulation Brain Network and Treat Depression and Anxiety		RMH120245A	\$40,539	\$376,588
93.242	A Portable PET Insert System for Simultaneous TOF-PET and MR Brain Imaging	PETcoil, Inc.	001		\$177,139
93.242	A Pragmatic Latent Variable Learning Approach Aligned with Clinical Practice		RMH123443A	\$37,657	\$297,189
93.242	A Wearable Optical Imaging System for Daily Monitoring of Prefrontal Activity in ADHD		RMH123873A	\$107,085	\$209,837
93.242	Activity-Dependent Synaptic and Circuit Plasticity		PMH086403B		\$22,791
93.242	Advanced Assessment of Auditory-Vocal Affect in Autism with Speech and Music		KMH122730A		\$136,069
93.242	Affordable wireless neural recording for mice (SBIR II)	Jinga-hi, Inc.	Hugenard SBIR; SPO 134282		\$26,981
93.242	An integrative framework of cognitive control and reward modulation in children with ADHD: from brain dynamics to clinical symptoms		RMH124816A		\$6,245
93.242	Anti-Interneuron Antibodies in Abrupt-Onset Pediatric Obsessive-Compulsive Disorder	Yale University	GR106053 (CON-80001750)		\$21,935
93.242	BIDS-Derivatives: A data standard for derived data and models in the BRAIN Initiative		RMH114705A		\$942
93.242	Brain circuit mapping using light inducible recombinase systems		RMH114106B		\$478,262
93.242	BRAIN INITIATIVE RESOURCE: Development of a human NeuroElectroMagnetic data Archive and tools Resource (NEMAR)	University of California, San Diego	122375137,MP PO S9002551		\$18,991
93.242	Brain-spanning and scale-crossing circuitry mediating drive function and dysfunction		RMH086373C		\$280,011
93.242	Channel structure-based tools for precise interrogation of circuitry and behavior		RMH075957D		\$265,897
93.242	Characterizing cognitive control networks using a precision neuroscience approach		RMH117772A		\$300,278
93.242	Chronic Axon Hypofunction in Maternal Immune Activation Models ofNeurodevelopmental Disorders		RMH121075B		\$357,700
93.242	Circuit Mechanisms Governing the Default Mode Network	University of North Carolina at Chapel Hill	5120592		\$12,508
93.242	CLARITY: Fully assembled biology		RMH099647A		-\$15,164
93.242	Computational and brain predictors of emotion cue integration		RMH112560A	\$133,076	\$292,487
93.242	Computational ontology of brain systems across the human neuroimaging literature		FMH120956A		\$35,249
93.242	Computational, Neural, and Behavioral Studies of Competition-Dependent Learning	Princeton University	SUB00000163		\$53,057
93.242	Confirming the efficacy/mechanism of an adaptive treatment for adolescent anorexia nervosa		RMH110538A	\$85,165	\$528,255
93.242	Confirming the Efficacy/Mechanism of Family Therapy for Children with Low Weight Avoidant/Restrictive Food Intake Disorder (ARFID)		RMH121292A		\$404,126
93.242	Convergence of genetic and gestational immune mechanisms in 16p11.2-related ASD		RMH108660A		\$231,615
93.242	Convergence of genetic and gestational immune mechanisms in CHD8-related ASD		RMH108659A		\$307,005
93.242	COVID-19 - UW Alacrity Center for Psychosocial Interventions	University Of Washington	UWSC11370; BFO 42808		\$25,414
93.242	Cross modal integration of molecular and physiological networks in ASD 2/2		UMH115745A		\$824,563
93.242	Defining Cell Type Specific Contributions to fMRI Signals		RMH114227A		\$485,847
93.242	Developing a mechanistic neurobiological model of exposure therapy response based on fear extinction theory		KMH113708A		\$144,183
93.242	Developmental trajectory of anxiety, avoidance, and arousal in girls with the FMR1 full mutation		RMH050047E		\$589,057
93.242	Distinguishing Clinical and Genetic Risk of Suicidal Ideation from Attempts to Inform Prevention	Vanderbilt University Medical Center	VUMC78648 / Ro1 MH121455		\$152,991
93.242	Enabling ethical participation in innovative neuroscience on mental illness and addiction: towards a new screening tool enhancing informed consent for transformative research on the human brain		RMH114856A	\$14,679	\$313,658
93.242	Ethical, Legal and Social Implications in the Use of Digital Technology for Mental Health Applications		KMH118375A		\$117,990
93.242	Examining the hierarchical structure of the RDoC framework using large-scale data-driven computational approaches		RMH127608A		\$2,593
93.242	Foundations of MRI Corticography for Mesoscale Organization and Neuronal Circuitry	University of California, Berkeley	000009346/PO# BB08840113		\$66,527
93.242	Function of Neurexins		RMH052804G		\$789,000
93.242	Gaining insight into psychiatric disease by engineering piece by piece the human brain in vitro.		RMH107800B		\$800,741
93.242	Gene expression profiling of IPSC derived neurons in Autism Spectrum Disorder		RMH116674A	\$419,429	\$954,518
93.242	Gene Networks Influencing Psychotic Dysconnectivity in African Americans	Boston Children's Hospital	GENFD0001624607		\$27,758
93.242	Genetics of Severe Mental Illness	University of California, Los Angeles	2000 G VF036 / Ro1 MH113078		\$95,061
93.242	How is anxiety-related information relayed across hippocampal-prefrontal circuits	University of California, San Francisco	114658c		\$50,332
93.242	Identifying causal dynamical motifs of anhedonia with circuit-level tools		RMH086373B		\$13,864
93.242	Identifying causal genetic variants and molecular mechanisms impacting mental health		RMH125244A		\$276,331
93.242	Identifying mediators of sex hormone uptake and signaling		FMH125593A		\$29,727
93.242	Identifying the causal role of the amygdala in human approach-avoidance conflict behavior		FMH127859A		\$6,364
93.242	Impact of Telemedicine on Medicare Beneficiaries with Mental Illness	Harvard University	153246.5117908.0003		\$28,559
93.242	Implementation Support for Prevention Program Delivery by College Peer Educators.		RMH112743B	\$288,635	\$418,596
93.242	Implementing Family-Based Treatment for Adolescent Anorexia Nervosa for Providers in Private Practice: A Feasibility Study		RMH123596A		\$74,773
93.242	Improving Access and Treatment for Co-occurring Opioid Use Disorders and Mental Illness (3UF1MH121954-01S1)	Rand Corporation	1254768-100-EHCAZ		\$26,277
93.242	Improving Cognition via Exercise in Schizophrenia	Icahn School of Medicine at Mount Sinai	0255-3351-4609		\$25,568
93.242	Induced neuronal cells: A novel tool to study neuropsychiatric diseases		RMH092931C		\$662,968
93.242	In-Home Sleep Monitoring to Detect Suicide Risk in Veterans	Palo Alto Veterans Institute for Research	WOS0023-01		\$50,408
93.242	Integrated, cell type specific functional genomics analyses of regulatory sequence elements and their dynamic interaction networks in neuropsychiatric brain tissues		UMH116529A		\$1,392,344
93.242	Integration of markers across physiologic, behavioral, and self-report levels at baseline and in response to treatment to characterize novel subtypes in youth with ADHD		KMH121650A		\$145,141
93.242	Integrative computational models of latent behavioral and neural constructs in children: a longitudinal developmental big-data approach		RMH121069A	\$51,603	\$707,735
93.242	Integrative Molecular and Phenotype Analysis of 22q11.2 Deletion Syndrome		RMH100900B		-\$16,215
93.242	Integrative Molecular and Phenotype Analysis of 22q11.2 Deletion Syndrome		RMH100900B	\$128,564	\$128,564
93.242	Interrogation of network-wide neuronal dynamics during fear memory in mouse default mode network		KMH117350A		\$149,695
93.242	Investigating how signaling via adhesion GPCR Latrophilins regulates synapse formation and specificity in the hippocampus		KMH117235A		\$327
93.242	Investigating the role of TCF4 in human interneuron function and dysfunction		KMH119319A		\$81,417
93.242	Large-scale image-based meta-analysis of functional MRI data	University of Texas at Austin	UTA19-000290		\$216,361
93.242	Latrophilin Function in Synapse Formation: Relation to ADHD		RMH126929A		\$12,716
93.242	Learning and brain plasticity in children with autism: relation to cognitive inflexibility and restricted-repetitive behaviors		RMH084164B		\$323,262
93.242	Leveraging Routine Clinical Materials and Mobile Technology to Assess CBT Quality	Palo Alto Veterans Institute for Research	WIS0003-03		\$7,789
93.242	Ligand-Receptor Dynamics and Cellular Responses Studied In Situ Using Venturi Easy Ambient Sonic-Spray Ionization Mass Spectrometry		RMH112188A		\$4,853

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.242	Machine learning to distinguish HAND from Alzheimer's disease in HIV over age 60	University of California, San Francisco	112548c		\$211,047
93.242	Mapping connectomes for disordered emotional states		UMH109985A		\$456,791
93.242	Mechanistic circuit markers of transcranial magnetic stimulation outcomes in pharmacoresistant depression		RMH120126A	\$102,169	\$309,125
93.242	mlQa: A Highly Scalable and Customizable Platform for Medical Image Quality Assessment - Phase II	Kitware, Inc.	K003016-00-S02		\$361,324
93.242	Mixed-Reality Neuronavigation for Transcranial Magnetic Stimulation Treatment of Depression		RMH116484A		-\$100
93.242	Molecular and Neural Networks Underlying Social Attachment		RMH108319B	\$91,570	\$157,707
93.242	Molecular dissection of prefrontal cortex circuit architecture		KMH114022A		\$123,282
93.242	Molecular Logic Sculpting Cell-Specific Contributions of Neurexin-1 at the Tripartite Synapse		KMH123788A		\$65,562
93.242	Molecular tools for labeling and manipulating functional brain circuits		RMH119353A		\$722,180
93.242	MR-guided Focused Ultrasound Neuromodulation of Deep Brain Structures		RMH111825A		-\$76
93.242	Multi-modal study of cognitive and neural differences in media multitaskers		RMH111672A		\$119,640
93.242	Neural circuit mechanisms underlying hierarchical visual processing in Drosophila		FMH118707A		\$71,414
93.242	Neural Circuitry and Synaptic Physiology Underlying MDMA's Prosocial Effect		KMH110610A		\$111,703
93.242	Neural circuits of frustration		KMH123791A		\$191,848
93.242	Neural Mechanisms of Navigational Decision Making		FMH119766A		\$68,551
93.242	Neural population dynamics in premotor cortex during decision making		KMH121533A		\$101,331
93.242	Neurobehavioral Trajectories of Pediatric Depression and Insulin Sensitivity		RMH106581A		\$211,870
93.242	Neurobiology and dynamics of Active Sensing	Columbia University	8(GG012936-05); PO# G14678		\$175
93.242	Neurochemical and functional neuroimaging of negative and positive valence systems in binge eating		KMH106794A		\$7,754
93.242	Neurodevelopment and Psychosis in the 22q11.2 Deletion Syndrome	University of California, Los Angeles	2000GVG294		\$54,247
93.242	Neuroscience Research Training		TMH020016F		\$642,051
93.242	NeuroScout: A cloud-based platform for rapid re-analysis of naturalistic fMRI datasets	University of Texas at Austin	UTA16-001175		\$90,443
93.242	Next generation in-vivo diffusion imaging at submillimeter resolution		RMH116173B	\$53,376	\$131,149
93.242	NMDAR Modulation As A Therapeutic Target and Probe of Neural Dysfunction in OCD		RMH105461A	\$53,910	\$327,610
93.242	Noninvasive neuromodulation via focused ultrasonic drug uncaging		RMH114252A		\$48,243
93.242	Numbers in the Human Brain		RMH109954A		\$205,811
93.242	Octopus microscopy for imaging multiple brain areas concurrently		RMH103116B		\$850
93.242	Only time will tell: a computational psychiatry approach to model temporal transitions in brain activity as a lens towards developing better diagnostic nosology for psychiatric illness		DMH119735A		\$471,050
93.242	OpenNeuro: An open archive for analysis and sharing of BRAIN Initiative data		RMH117179A		\$1,559,782
93.242	Optical dissection of the neural circuitry controlling sensorimotor gating		KMH113132A		-\$619
93.242	Projection-specific modulation of neural activity with a non-genetic method.		KMH117490A		\$34,790
93.242	Psychobiological Mechanisms Underlying the Association Between Early Life Stress and Depression Across Adolescence		RMH101495C		\$928,108
93.242	Psychosis Risk Evaluation, Data Integration and Computational Technologies (PREDICT): Data Processing, Analysis, and Coordination Center	Brigham and Women's Hospital	124050		\$140,913
93.242	Research Career Development Institute for Psychiatry (R25)	University of Pittsburgh	CNVA00049415 (128103-1)		\$14,156
93.242	Research Training for Child Psychiatry and Neurodevelopment		TMH019908F		\$191,486
93.242	Research Training for Child Psychiatry and Neurodevelopment		TMH019908G		\$10,074
93.242	Revealing circuit control of neuronal excitation with next-generation voltage indicators		RMH114105A		\$152,286
93.242	Robust 1H MRSI of GABA, Glutamate, Glutamine, and Glutathione		RMH110683A		\$356,065
93.242	Role of L-type Calcium Channels in Human Interneuron Migration and Integration		RMH115012A		\$279,385
93.242	SCH: Advancing Language-based Analyses of Social Media to Reliably Monitor Variation in Population Mental Health	Stony Brook University, State University of New York	90077/2/1165626		\$32,899
93.242	Sex Chromosome GWAS of Post-Traumatic Stress Disorder (PTSD)		RMH125358A		\$1,828
93.242	Sex hormone effects on neurodevelopment: Controlled puberty in transgender adolescents		RMH115349A	\$25,312	\$410,154
93.242	Sex hormones and post-traumatic stress disorder (PTSD)		RMH123486A	\$46,479	\$401,971
93.242	Single Molecule Studies of SNARE-Induced Vesicle Fusion		RMH063105D		\$344,198
93.242	Single Molecule Studies of SNARE-Induced Vesicle Fusion		RMH063105E		\$256,084
93.242	Single synapse analysis of synaptic plasticity by combining electrophysiology and array tomography		RMH111768A		\$582,702
93.242	Sleep Disturbance and Emotion Regulation Brain Dysfunction as Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Dementia		RMH120776A		\$299,341
93.242	Social factors in the mental health of young adults: Bridging psychological and network analysis		RMH125974A		\$55,068
93.242	Spatial Codes Across the Medial Entorhinal Cortex for Memory and Navigation		RMH106475B		\$272,862
93.242	Study of a PST-Trained Voice-Enabled Artificial Intelligence Counselor (SPEAC) for Adults with Emotional Distress	University of Illinois at Chicago	18059 / R61 MH119237		\$10,589
93.242	Systematic characterization of trans regulation of A-to-I RNA editing in neurons		RMH115080A		\$578,316
93.242	Target Engagement of a Novel Dissonance-Based Treatment for DSM-5 Eating Disorders R33 Phase		RMH111782C	\$503,375	\$728,827
93.242	Testing A Computational Model Of Neural Responses In Autism	University Of Washington	UWSC12592; BPO 54858		\$69,272
93.242	Text2Connect: A personalized text messaging intervention to increase depressed and/or suicidal adolescents attendance to embedded mental health treatment.	University of Pittsburgh	CNVA00058456 (134332-3)		\$33,721
93.242	Thalamic Circuits for Prosocial Behaviors in Mice		RMH116904B		\$360,799
93.242	The Effects of Early Life Stress on the Development of Brain Networks: Predicting Risk for Depression and Suicidal Ideation in Adolescence		FMH120975A		\$67,911
93.242	The Effects of Stanford Accelerated Intelligent Neuromodulation Therapy on Explicit and Implicit Suicidal Cognition		RMH125160A		\$585,616
93.242	The Neural Mechanism of Interval Timing in Drosophila		FMH120865A		\$65,235
93.242	The role of Mytil in the developing and adult mouse brain		RMH115999A		\$875,454
93.242	The Role of Neuronal HLA Class Is in Developmental Plasticity		FMH120957A		\$43,740
93.242	The role of the septum in social memory		KMH122697A		\$93,726
93.242	The Roles of Inflammatory and Glutamatergic Processes in the Neurodevelopmental Mechanisms Underlying Adolescent Depression	University of California, San Francisco	Subaward 11706sc		\$87,466
93.242	Tracking Changes in High-Dimensional Circuit Behaviors over Long-Term Neural Recordings		FMH122998A		\$64,234
93.242	Trans-synaptic bidirectional tracing tools for imaging and omics analysis		RMH117821A		\$878,432
93.242	Using game theory in primates to study the distributed neuronal and time-causal underpinnings of interactive social behavior	Massachusetts General Hospital	231064		\$25,399
93.242	Utilizing changes in human brain connectivity to establish a dose-response relationship involved in the therapeutic actions of prefrontal brain stimulation on depression symptoms		RMH122754A		\$682,007
93.242	UW Alacrity Center for Psychosocial Interventions	University Of Washington	UWSC11370; BPO 42808		\$10,704
93.242	What are we stimulating with transcranial ultrasound in Mice?		RMH116977A		\$400,877
93.242	Whole-Brain Oscillatory and Behavioral Responses to Noninvasive Local Ketamine Uncaging in the Medial Prefrontal Cortex		FMH119763A		\$36,597

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

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93.243	Chekws: Hope for Tomorrow	Two Feathers Native American Family Services	158007		\$9,331
93.243	Establishing a Clinical Support System for Serious Mental Illness (CSS-SMI): Implementation and provision of evidence-based treatment and recovery support programs	American Psychiatric Association	Project Title: CSS-SMI SAMHSA		\$61,402
93.243	Mental Health Technology Transfer Center (MHTTC) National Coordinating Center (NCC)		18SM81726A	\$360,726	\$1,067,714
93.243	Mental Health Technology Transfer Center (MHTTC) National Coordinating Center (NCC)		18SM81726A-PROG INC		\$118,056
93.262	Occupational Exposure to PM2.5 and Cardiovascular Disease(CVD)		PAR13-129RESCOAGFY16	\$321,803	\$420,025
93.273	3/3 COMpAAAS Tripartite: ART-CC, KP, and VA	Yale University	GR109295 (CON-80002347)		-\$479
93.273	Alcohol disrupts the balance between dopamine and GABA co-released by midbrain dopamine neurons		RAA025721A		\$404,189
93.273	Alcohol-related sleep disturbances and circuit dynamics of arousal neuropeptides		KAA025677A		\$49,057
93.273	Alcohol-related sleep disturbances and circuit dynamics of arousal neuropeptides		RAA025677B		\$148,210
93.273	Cerebellar Structure and Function in Alcoholism		RAA010723E	\$113,834	\$386,967
93.273	CNS Deficits - Interaction of Age and Alcoholism	SRI International	157-000010		\$74,325
93.273	Compounded Neuronal Damage in Comorbid Cigarette Smoking and Addiction	Indiana University	IN4687305SU / PO0061224		\$220,656
93.273	COVID-19 - Impact of the Coronavirus Pandemic on Alcohol Consumption and Mental Health in Young People	SRI International	PO51078		\$48,659
93.273	Defining Phenotypes of Alcohol-Associated Liver Disease with Acute Hepatic Decompensation		KAA029197A		\$22,291
93.273	Effects of GABA Co-Release on Alcohol-Induced Synaptic Plasticity		FAA028693A		\$63,336
93.273	Ethanol and aldehyde dehydrogenases in health and disease		RAA011147F		\$579,308
93.273	International Research Collaboration on Neuroimaging Studies of Alcoholism		UAA017923B	\$37,894	\$78,448
93.273	MECHANISMS OF CHANGE FOR AN EFFECTIVE ALCOHOL TEXT MESSAGE INTERVENTION	Rutgers University	1710; PO# 1426750		\$80,445
93.273	NCANDA: Data Analysis Component	SRI International	PO15305		\$59,562
93.273	NCANDA: Data Analysis Component	SRI International	PO15305/1228718-100-EHBTU		\$263,916
93.273	Neural Basis of alcohol/substance use disorders and suicide in American Indians	Scripps Research Institute	5-53951		\$36,283
93.273	Neuroimaging of Alcohol-Induced Neuroadaptation: Translation from Animals to Humans	SRI International	PO10259		\$244,372
93.273	Sleep Stabilization and the Road to Recovery	HealthRhythms, Inc.	SPO 146381		\$10,052
93.273	The Role of GABA Co-release from Dopamine Neurons in Ethanol Consumption		FAA027432A		\$40,340
93.273	Tracking HIV Infection and Alcohol Abuse CNS Comorbidity with Neuroimaging	SRI International	PO32128		\$352,829
93.273	Understanding 12-Step Involvement among Sexual and Gender Minority Individuals	Public Health Institute	01844		\$2,098
93.273	Understanding and testing recovery processes for PTSD and alcohol use following sexual assault	University Of Washington	UWSC11653; BPO 45799		\$25,759
93.273	Year 4 COMpAAAS Tripartite: ART-CC, KP, and VA	Yale University	GR111110 (CON-80002642)		\$106,691
93.279	A Preliminary Investigation of Pre-Frontal repetitive Transcranial Magnetic Stimulation (rTMS) for the Treatment of Cannabis Use Disorder		KDA043628B		\$160,685
93.279	A Social Network AOD Intervention for Homeless Youth Transitioning to Housing	Rand Corporation	SCON-00000412		\$2,628
93.279	Allosteric modulation of the mu-opioid receptor-Segment B	University of Michigan	SUBK00011171 // 3006153540		\$124,147
93.279	Applying novel technologies and methods to inform the ontology of self-regulation	Dartmouth College	R1075		\$198,904
93.279	Cellular mechanisms of gaze-biased choice preference		KDA036659A		-\$1,831
93.279	Characterizing the role of fronto-striatal connectivity in value-based decision-making		KDA050662A		\$134,039
93.279	Computational Methods for Identification of Genetic Factors Affecting the Response to Drug Abuse		UDA044399A		\$933,079
93.279	COVID-19 - Supplement: Social Media Intervention to Promote Smoking Treatment Utilization and Cessation Among Alaska Native Smokers	Mayo Clinic	LEL-239893/PO #67460237		\$6,682
93.279	COVID-19 - Making Better Decisions: Policy Modeling for AIDS and Drug Abuse		RDA015612E	\$181,507	\$74,886
93.279	Development of a Commercial Platform for Discovery and Validation of Key Microbial Metabolites in CNS Disorders	Second Genome, Inc.	00001		\$83,209
93.279	Effect of pain catastrophizing on prescription opioid craving		KDA048972A		\$113,729
93.279	Identification of cells and signaling mechanisms underlying opioid analgesia and side effects	University of North Carolina at Chapel Hill	5118966		\$170,070
93.279	Identifying and Disseminating Substance, Treatment, Strategy (STS) recommendations to AIDS Service Organizations	Research Triangle Institute	7-312-0216621-65533L		\$25,466
93.279	Imaging the behaviorally evoked neural ensemble dynamics of the locus coeruleus in healthy and addicted brains		RDA046183A		\$34,304
93.279	Inhibitory synaptic transmission, stress, and drugs of abuse		RDA011289F		\$420,465
93.279	Interdisciplinary Research Training in Pain and Substance Use Disorders		TDA035165B		-\$2,079
93.279	Interdisciplinary Research Training in Pain and Substance Use Disorders		TDA035165C		\$441,592
93.279	Making the HIV-1 gp41 pocket amenable to small-molecule drug discovery		DDA043893A		\$680,466
93.279	Measuring Infant Pain Objectively using Sensor Fusion and Machine Learning Algorithms	Autonomous Healthcare, Inc.	1R41DA046983-01-S1		\$13,113
93.279	Multivariate Machine Learning to Characterize Opioid-induced Alterations in the Brain in Chronic Pain		KDA048179A		\$127,625
93.279	Neural Circuit Dynamics of Drug Action		PDA042012A		\$3,270,867
93.279	Neuroimaging and Mentoring in Translational Pain Research		KDA029262B		\$36,879
93.279	Noninvasive bioluminescent neuronal activity in freely behaving animals imaging of n		RDA048252A		\$87,180
93.279	Participatory System Dynamics vs Audit and Feedback: A Cluster Randomized Trial of Mechanisms of Implementation Change to Expand Reach of Evidence-based Addiction and Mental Health Care	Palo Alto Veterans Institute for Research	ZIM0002-01		\$17,472
93.279	Predictive modeling: the role of opioid use in suicide risk	Kaiser Permanente	OOS030297-STFD-01.02		-\$19
93.279	Psychological Risk Factors for Persistent Opioid Use and Prevention of Chronic Opioid Use and Misuse After Surgery: Postoperative Motivational Interviewing and Guided Opioid Weaning		RDA045027A		\$607,675
93.279	RoID Structural and molecular identification of circuitry underlying joint processing of motivation and aversion		RDA035377C		\$356,834
93.279	RCT of Woebot for Treating Substance Use Disorders	Woebot Health	138716		-\$1,307
93.279	RCT of Woebot for Treating Substance Use Disorders	Woebot Health	RDA048712A		\$112,658
93.279	Reducing racial disparities in the treatment of opioid use disorder using machine learning-based causal analysis		KDA051534A		\$141,315
93.279	Single Session Pain Catastrophizing Class: Efficacy & Mechanisms for Reducing Opioid Use Among Chronic Pain Patients		KDA047473A		\$134,403
93.279	Social Media Intervention to Promote Smoking Treatment Utilization and Cessation Among Alaska Native Smokers	Mayo Clinic	BOA-239893/PO #67268639		\$22,218
93.279	Structural Basis of Opioid Receptor Function		RDA036246C	\$120,014	\$383,436
93.279	Substance use and DNA methylation at the intersection of sex and gender.	University of California, San Francisco	128028c		\$35,676
93.279	Targeting natural killer cells to HIV in intravenous drug users		DDA046089A		\$907,473
93.279	Telemedicine for Treatment of Opioid Use Disorder	Harvard University	153367.5117905.0003		\$43,756
93.279	Thalamic Circuits Underlying Opioid Seeking		RDA045664A		\$556,051
93.279	The Epidemiology and Economics of Chronic Back Pain		KDA042314A		\$109,349
93.279	Using NIATx Strategies to Implement Integrated Services in Routine Care		RDA037222B	\$177,910	\$296,011

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.279	Validation and pharmacological profiling of a non-psychoactive THC analog, a novel and selective CB2 receptor agonist, in proof of concept studies using rodent models of heroin addiction		UDA052415A		\$178,798
93.279	Western States Node of the National Drug Abuse Treatment Clinical Trials Network	Oregon Health & Science University	1017225_STANFORD		\$177,173
93.286	125287 UQ R01; Enabling reliable cardiovascular simulations via uncertainty quantification		REB018302A	\$86,859	\$154,737
93.286	A New Direction to Achieve Ultra-Fast Timing for Positron Emission Tomography		REB023903A		\$611,964
93.286	A Wireless, Implantable Microdevice for Closed-Loop Drug Delivery to Prevent the Morbidity of Diabetes Therapy-Induced Hypoglycemia		REB025867A		\$538,443
93.286	Accessing the Neuronal Scale: Designing the Next Generation of Compact Ultra High Field MRI Technology for Order-of-Magnitude Sensitivity Increase in Non-Invasive Human Brain Mapping		REB025131A		\$345,759
93.286	Assessment of Bone Metabolism After Localized Mechanical Loading		REB030180A		\$104,299
93.286	Biocompatible strain sensors for continuous monitoring of tumor progression during immunotherapy treatments		FEBO29787A		\$62,816
93.286	Center for Advanced Magnetic Resonance Technology at Stanford		PEB015891E		\$69,625
93.286	Cerebrovascular Reserve Imaging with Simultaneous PET/MRI Using Arterial Spin Labeling and Deep Learning		REB025220A		\$797,718
93.286	Clutter Suppression in Echocardiography Using Short-Lag Spatial Coherence Imaging		REB013661B		-\$2,489
93.286	Clutter Suppression in Echocardiography Using Short-Lag Spatial Coherence Imaging		REB013661C	\$99,554	\$388,263
93.286	Comprehensive MRI near Total Joint Replacements		REB017739A		\$3,299
93.286	COVID-19 - Dual orthogonal fluorescent protease sensors for image guided surgery		REB028628AC4		\$319,831
93.286	COVID-19 - In vivo PET imaging of novel engineered AAVs informs capsid design		REB028646AC3		\$538,494
93.286	CRCNS US-France-Israel Research Proposal: A personalized approach to brain stimulation		REB030884A		\$64,993
93.286	Development and Translation of High Performance Receive Arrays for Pediatric MRI		REB019241A		\$149,098
93.286	Development and Translation of Hyperpolarized C-13 Prostate Cancer MRI Methods	University of California, San Francisco	1136isc		\$71,030
93.286	Development and Validation of Radiation-Free Pediatric Renal Function Quantification		REB026136A	\$215,664	\$651,092
93.286	Development of Molecular Microbubble Probes and Ultrasound-Guidance in Immunotherapeutic Strategies		REB029046A		\$206,726
93.286	Dissecting distributed representations by advanced population activity analysis methods and modeling		REB028171A		\$430,814
93.286	Dual orthogonal fluorescent protease sensors for image guided surgery		REB028628A		\$148,893
93.286	Enabling the Next Generation of High Performance Pediatric Whole Body MR Imaging		UEB029427A	\$285,561	\$954,151
93.286	Endovascular Interventional MRI: Optimizing Tools and Techniques at 3T	University of California, San Francisco	11070sc		\$115,742
93.286	Engineered biomaterials to modulate cell-cell signaling for the robust expansion of stem cells		REB027171A		\$454,255
93.286	Enhanced MR for morphological characterization of ligaments, tendons and bone	State University of New York at Buffalo	R1239015		\$70,689
93.286	Exosome separation and digital resolution detection of blood-based nucleic acid biomarkers for noninvasive therapeutic diagnostics in cancer	University of Illinois at Urbana Champaign	100817-18111		\$80,713
93.286	Flexible and Wireless Bioelectronics for Continuous Monitoring of Intracranial Pressure		KEB031178A		\$12,346
93.286	Generation of highly selective activity based probes using chemically modified phage		REB026285A		\$253,459
93.286	High Dose Efficiency CT System		UEB017140A	\$19,666	\$19,666
93.286	High spatial resolution dedicated head and neck PET system based on cadmium zinc telluride detectors	University of Illinois	093160-17302		-\$203
93.286	High-Resolution Breast MRI at 3.0T		REB009055D		\$788,867
93.286	Imaging Brain Metabolism Using MRS of Hyperpolarized 13C-Pyruvate		REB019018A		-\$92
93.286	Improved Image Quality of Focal Liver Lesions Using the Coherence of Ultrasound		REB015506B		-\$4,622
93.286	Improving Liver Ultrasound Image Quality in Difficult-to-Image Patients		REB027100A	\$8,814	\$629,477
93.286	In vivo PET imaging of novel engineered AAVs informs capsid design		REB028646A	\$172,943	\$519,366
93.286	Injectable Hydrogels to Protect Transplanted Cells from Hypoxia		REB027666A		\$409,590
93.286	Low-cost, handheld light sheet microscope for guiding anal cancer diagnosis	University of Arizona	610659		\$15,809
93.286	Mobilize Center: Models for Mobile Sensing and Precision Rehabilitation		PEB027060A		\$857,581
93.286	MRI Corticography: Developing Next Generation Microscale Human Cortex MRI Scanner	University of California, Berkeley	00010552; PO# BB01432952		\$161,060
93.286	Multi-Disciplinary Training Program in Cardiovascular Imaging at Stanford		TEB009035C		\$269,193
93.286	Nanotechnology for Non-perturbative, Longitudinal Sampling from hiPSC Cardiomyocytes		REB025332A		\$140,572
93.286	Neuronal Ensembles to Networks: Ultrahigh Resolution Imaging of Human Brain Function and Connectivity	University Of Minnesota	No06269301		\$126,502
93.286	New Statistical Methods for Medical Signals and Images		RGM134483G		\$542,936
93.286	New tools for tracking single cells in vivo		REB030367A	\$46,277	\$430,409
93.286	Novel Bayesian linear dynamical systems-based methods for discovering human brain circuit dynamics in health and disease		REB022907A		-\$37
93.286	Novel Transducer Technology for Transcranial Ultrasound		REB023901A		\$297,744
93.286	Origins of human blood lineages in regenerative medicine		DEB024246A		\$580,486
93.286	Osteoarthritis: Quantitative Evaluation of Whole Joint Disease with MRI		REB002524C	\$12,121	\$18,065
93.286	Osteoarthritis: Quantitative Evaluation of Whole Joint Disease with MRI		REB002524D		\$481,734
93.286	Predoctoral Training in Biomedical Imaging at Stanford University		TEB009653B		\$621
93.286	Probing basophil function in microfluidic systems for allergic disease diagnosis		REB030643A		\$5,931
93.286	Probing optical property changes in photonic materials for faster timing in PET		REB015155A		-\$378
93.286	PSMA activatable MRI contrast agents to improve the detection of prostate cancer		REB028348A		\$264,673
93.286	Pulsed Focused Ultrasound (pFUS) exposures and devices for tissue permeabilization without contrast agents	University Of Washington	UWSC12547 BPO 53728		\$40,131
93.286	Quantitative Assessment of Early Metabolic and Biochemical Changes in Osteoarthritis		REB022634B		\$122,291
93.286	QuBBD: Wearable artificial intelligence for big data-driven healthcare in child development		REB025025A		\$131,094
93.286	Radiogenomics framework for non-invasive personalized medicine		REB020527B		\$239,001
93.286	Rapid MRI Acquisition for Pediatric Low-grade Gliomas		REB020613B		\$205,622
93.286	Rapid Robust Pediatric MRI		REB009690C	\$359,432	\$622,631
93.286	RF-penetrable PET ring for acquiring simultaneous time-of-flight PET and MRI data		REB019465A		\$254,335
93.286	SCH: A Virtual Surgery Simulator to Accelerate Medical Training in Cardiovascular Disease		REB029362A		\$338,002
93.286	Single-Shot Quantitative X-Ray Imaging for Interventional Procedures		REB030080A		\$241,485
93.286	Software tool for routine, rapid, patient-specific CT organ dose estimation	Marquette University	70304-004-04		\$14,002
93.286	Stanford Biodesign/Bioengineering Clinical Need Identification Bootcamp for Undergraduates		REB029387A		\$13,107
93.286	Staphylococcus serine hydrolases as targets for therapeutic and imaging contrast agents		REB026332A		\$145,128
93.286	Sub-Millimeter PET System Design	University of California, Santa Cruz	A20-0581-S002 / R01 EBo28091		\$193,226
93.286	Synthetic DNA-free Circuits for "Scarless" Programming of Mammalian Cells		REB027723B		\$102,242
93.286	Technologies to drastically boost photon sensitivity for brain-dedicated PET		REB025125A		\$93,478
93.286	Tumor-targeted delivery and cell internalization of theranostic gadolinium nanoparticles for image-guided nanoparticle-enhanced radiation therapy		REB026553A	\$20,843	\$208,404
93.286	Ultrasound-guided DNA delivery for regenerative medicine	Cedars-Sinai Medical Center	1458794		\$209,286

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93-307	Caminemos Juntas: A Location-Based Smartphone App for Latinas to Connect with Nearby Walking Partners	Klein Buendel, Inc.	0321-0172-002		\$46,967
93-307	Development and Cross-Validation of a Hospital Risk Screening Tool for Posttraumatic Psychological Disorder	Palo Alto Veterans Institute for Research	CAS0012-02		\$87,788
93-307	Elucidating lung cancer etiology among Asian American female never smokers	University of California, San Francisco	119848c		\$9,930
93-307	FLWSHIP K.McNamara, PI C.Curtis-Quantifying patient-specific tumor evolutionary dynamics and resistance mechanisms in HER2-positive breast cancers treated with targeted therapy		FCA239313A		\$38,159
93-307	Hospital quality, Medicaid expansion and racial/ethnic disparities in maternal mortality and morbidity	University Of South Carolina	21-4270		\$22,562
93-307	Identifying, refining, and testing sexual orientation and gender identity measures to detect and delineate sexual and gender minority populations for population research		RMD015878A	\$7,238	\$161,496
93-307	Immigrant Families and Childrens Health: The Intergenerational Health Impact of Federal and State Immigration Policy		RMD013844A	\$25,858	\$470,214
93-307	Preventing Hiv Among Native Americans Through The Treatment Ptsd & Substance Use	University Of Washington	UWSC11400; BPO 43099/39894		\$11,045
93-307	Race/Ethnicity, DNA Methylation, and Disparities in Cardiovascular Mortality: NHANES 1999-2002	University of Michigan	3004739345 / Ro1 MD011721		\$123,023
93-307	Reducing Disparities in End of Life Cancer Care		KMD013474A		\$177,353
93-307	Stanford Precision Health for Ethnic and Racial Equity (SPHERE) Transdisciplinary Collaborative Center		UMD010724A	\$174,906	\$1,400,935
93-307	Together We STRIDE (Strategizing Together Relevant Interventions for Diet and Exercise)	Fred Hutchinson Cancer Research Center	0001023716 / U01 MD010540		\$16,072
93-307	U54 (PI Perera) African American Cardiovascular Pharmacogenetics CONSorTium (ACCOuNT): Discovery and Translation	Northwestern University	60044818 SU / U54 MD010723		\$153,973
93-307	Using census data linkages to study long-term impacts on disparities in DNA methylation		RMD013296A		\$64,093
93-310	4DN Interrogation of T Cell Exhaustion in Cancer		UCA260852A		\$613,123
93-310	A Bioorthogonal Approach to Study Mammalian Aging		DAG053015B		\$21,023
93-310	A brain pacemaker for aging and longevity		RAG063418A		\$2,889,818
93-310	A complete map of the top 100 molecules from the gut microbiome		DDK113598B		\$1,073,136
93-310	All of Us Research Program National Sexual and Gender Minority Engagement Network		OOD025276B		\$1,236,303
93-310	Center for Undiagnosed Diseases at Stanford		UHG010218A		\$1,507,722
93-310	Chemical biology of innate immunity for treating cancer and autoimmunity		DCA228044A		\$545,475
93-310	Closing the loop: development of real-time, personalized brain stimulation		DOD028128B		\$247,732
93-310	Comparison study of myoelectric readings of the GI tract measured internally and externally in mini-pigs	G-Tech Medical, Inc.	137338 / OT2OD026577-01S1		\$41,960
93-310	Comprehensive Structural and Functional Mapping of Mammalian Colonic Nervous System	University of California, Los Angeles	1556 G WA054		\$33,264
93-310	COVID-19 - Monitoring COVID-19 and Building Capacity with Northern Plains Tribes for the Future of Pandemics		UMD010724AC4	\$212,245	\$1,395,169
93-310	COVID-19 - Multi-Modal Wireless COVID Monitoring & Infection Alerts for Concentrated Populations		RNR020105AC4		\$523,590
93-310	COVID-19 - Stanford MoTrPAC Bioinformatics Center		UEB023674AC3		\$485,155
93-310	COVID-19 - Testing and Prevention in Correctional Settings	Yale University	GR111820(CON-80002847)		\$60,585
93-310	Creating a Catalog of Cancer Clonotype Drug Sensitivities with Single-Cell Genome Sequencing		DCA239145B		\$501,756
93-310	Creating high-resolution, epitope-focused vaccines		DAI158125A		\$1106,922
93-310	Cross-CFDE Semantic and Spatial Interoperability for Anatomy	Indiana University	8955-SJU		\$67,388
93-310	Deep learning frameworks for regulatory genomics.		DGM123485A		\$477,640
93-310	Developing approaches for universal organ transplantation		DOD024558A		\$272,232
93-310	DP5 - Predictive signatures in breast cancer using multiplexed ion beam imaging		DOD019822A		\$23,949
93-310	Enabling membrane protein structural analysis: tools for capillary diffusion crystallization and remote in situ diffraction experiments	Crystal Positioning Systems, Inc.	174038		\$62,130
93-310	Enabling Technologies for Human-Machine Hybrid Tissues		DLM012179A		\$19,492
93-310	Engineering and Imaging 3D genome structure-function dynamics across time scales	University Of Pennsylvania	582371/ PO 4717073		\$65,986
93-310	Engineering and Imaging 3D genome structure-function dynamics across time scales	University Of Pennsylvania	PO 4551321 /580861/U01DK127405		\$239,544
93-310	Flexible Hybrid Cloud Infrastructure for Seamless Management of HuBMAP Resource	Carnegie Mellon University	1090667-443069		\$9,462
93-310	Forecasting tumor evolution: Can the past reveal the future?		DCA238296A		\$1,722,002
93-310	Glioma Circuitry: Bridging Systems Neuroscience and Cancer		DNS11132A		\$1,431,915
93-310	In Vivo Control and Functional Visualization of Stem Cell-Driven CNS Regeneration		8-DOD007265B		-\$1,600
93-310	Leveraging spectral encoding for high dimensional biological multiplexing		DGM123641A		\$416,761
93-310	Live-cell multiplex super-resolution imaging of chromatin state transitions (U01 Clinical Trial Not Allowed)		UDK127419A		\$838,380
93-310	Machine Learning for Health Outcomes and Quality of Care in Low-IncomePopulations		DMD012722B		\$336,994
93-310	Molecular Mechanism and Novel Therapeutic Strategy in Alzheimer's Disease		DAG052940A		\$138
93-310	Next-Generation Genomic Imaging Technology		UCA255135B		\$349,757
93-310	Next-Generation Genomic Imaging Technology		UHL145623A		-\$17,409
93-310	Optogenetic Functional MRI to Mechanogenetic Functional Ultrasound		DNS116783A		\$301,022
93-310	Predicting Resilience in the Human Microbiome	Palo Alto Veterans Institute for Research	REL0028-01		\$6
93-310	Real-time biosensor for mapping the function of the pancreas		OOD025342A	\$75,679	\$1,345,431
93-310	Role of Innate Immune Dysregulation in the Etiology of Dementia		DAG072438A		\$753,804
93-310	Stanford MoTrPAC Bioinformatics Core - Infrastructure, Integration and Analytics		UEB023674A		\$2,071,271
93-310	Stanford Tissue Mapping Center		UHG010426A	\$109,023	\$1,906,220
93-310	Stanford/Salk MoTrPAC Site for Genomes, Epigenomes and Transcriptomes		UDK112348A	\$79,248	\$2,953,565
93-310	Stanford-SLAC CryoET Specimen Preparation Service Center (SCSC)		UGM139166A		\$1,723,126
93-310	Targeted Advertising for Cancer Prevention		DCA225433B		\$331,627
93-310	Telomere Extension Using Nucleoside-Modified Mrna And Exosomes As A Novel Therapeutic Approach		8-RAR063963A		-\$919
93-310	The Stanford SLAC CryoEM Center		UGM129541A		\$5,419,436
93-310	Toward an Animal Model of Freely Moving Human		8-DOD006409A		-\$752
93-310	Unraveling neuronal circuits and causal underpinnings of long time-scale social strategic behaviors		DMH126142A		\$153,207
93-323	COVID-19 - CA-FACTS: Solano and Santa Clara County	Public Health Foundation Enterprises, Inc. DBA Heluna Health	SPO 219313		\$79,370
93-323	COVID-19 - CALSCOPE: Seroepidemiology survey for COVID with CDPH	Public Health Foundation Enterprises, Inc. DBA Heluna Health	SPO 212745		\$48,896
93-349	Packaging and Spreading the Stanford Pediatric Weight Control Program - A Family-Based, Group, Behavioral Weight Control Program for Children with Obesity and their Families		19U18DP006423		\$478,528
93-350	Institutional Career Development Core (KL2)		KTR003143A		\$1,821,654
93-350	Joint Pain on a Chip: Mechanistic Analysis, Therapeutic Targets, and an Empirical Strategy for Personalized Pain Management	University of Pittsburgh	AWD00001324 (133694-1)		\$161,031
93-350	Seg 1 Effect of Microgravity on Drug Responses Using Engineered Heart Tissues		UTR002588A		-\$109,489
93-350	Seg 1 Effect of Microgravity on Drug Responses Using Engineered Heart Tissues		UTR002588A	\$177,743	\$177,743



**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93-350	Seg 2_Effect of Microgravity on Drug Responses Using Engineered Heart Tissues		UTR002588B	\$152,140	\$366,946
93-350	Stakeholder Guidance to Anticipate and Address Ethical Challenges in Applications of Machine Learning and Artificial Intelligence in Algorithmic Medicine: a Novel Empirical Approach		RTK003505A		\$313,529
93-350	Stanford Center for Clinical & Translational Education and Research (Spectrum)		UTR003142A	\$130,220	\$9,069,510
93-350	Tissue Chip Modeling of Synovial Joint Pathologies: Effects of Inflammation and Adipose-Mediated Diabetic Complications	University of Pittsburgh	CNVA00056727 (134715-2)		\$186,074
93-350	Tissue Chip Modeling of Synovial Joint Pathologies: Effects of Inflammation and Adipose-Mediated Diabetic Complications	University of Pittsburgh	CNVA00056727 (136337-2)		\$11,106
93-350	Transformative Computational Infrastructures for Cell-Based Biomarker Diagnostics	J. Craig Venter Institute	JCVI-16-009 072005 (16-008)		\$116,979
93-350	University of Pittsburgh Clinical and Translational Science Institute	University of Pittsburgh	AWD00000243 (134445-34)		\$39,250
93-351	30-parameter FACSsymphony A3 flow cytometer for Shared Resource Lab		SOD026831A		-\$1,353
93-351	500 MHz NMR Spectrometer System with High Sensitivity Cryoprobe and Automated Sample Changer for Biochemical Research		SOD028697A		\$697,078
93-351	Animal Research Equipment, Digital Cages & Metabolic, Avoidance, Fear Conditioning, Place Preference, Self-Administration, Open Field & Microdialysis Systems for Translational Neuroscience		SOD030452A		\$51,339
93-351	Bellymount: A platform for ultra-long term imaging of abdominal organs in live adult Drosophila		ROD028273A		\$311,462
93-351	Comparative Medicine Biosciences Training Program		TOD011121C		\$149,994
93-351	Comparative Medicine Biosciences Training Program		TOD011121D		\$108
93-351	Frequent concatemeric insertions during AAV6/Cas9-mediated genome editing: Detection and Prevention		ROD030529A		\$7,600
93-351	Kinetic Imaging Cytometer (KIC) for High Throughput Studies of Cellular Physiology		SOD030264A		\$160,197
93-351	Nonhuman Primate Testing Center for Evaluation of Somatic Cell Genome Editing Tools	University of California, Davis	A19-2678-S001		\$17,775
93-351	OneView 4kX4k sCMOS camera for transmission electron microscopy applications		SOD028536A		\$146,542
93-351	Phase II: Commercialization of a preclinical Magnetic Particle Imaging system with sub-millimeter resolution, nano-molar sensitivity, and integrated CT	Magnetic Insight, Inc.	SPO 130394; NIBIB		-\$3,591
93-351	Phase II: Development of a Neurovascular Magnetic Particle Imaging system with sub-millimeter resolution and real time speed for non-radiative 3D perfusion angiography	Magnetic Insight, Inc.	SPO 151039; NIDA/SBIR Phase II		\$36,212
93-351	Selectable non-mosaic embryo editing		ROD030009A		\$221,987
93-351	Understanding SHRF, an RNA exosome-linked disease with multi-organ involvement		ROD030077A		\$149,538
93-353	A population-based virtual solution to reduce gaps in genetic risk evaluation and management in families at high risk for hereditary cancer syndromes: The Georgia-California GeneLINK Trial	University of Michigan	SUBK00012496 PO 3006350620		\$48,174
93-353	Bay Area Team Against Resistance	University of California, San Francisco	120333c		\$465,014
93-353	Breast Pre-Cancer Atlas Center	Duke University	A030743 / U2C CA233254		\$23,243
93-353	Breast Pre-Cancer Atlas Center	Duke University	A032658		\$250,518
93-353	Cancer Immunotherapy Trials Network Central Operations and Statistical Center	Fred Hutchinson Cancer Research Center	0001004381		-\$2,019
93-353	Cancer Immunotherapy Trials Network Central Operations and Statistical Center	Fred Hutchinson Cancer Research Center	0001042095		\$182,885
93-353	Discovery and Development of Optimal Immunotherapeutic Strategies for Childhood Cancers	Children's Hospital of Philadelphia	Sub3201380619 PO200314999-RSUB		\$3,901
93-353	Discovery and Development of Optimal Immunotherapeutic Strategies for Childhood Cancers (Project 1)	Children's Hospital of Philadelphia	3201380619 PO 20028638-RSUB		-\$8,881
93-353	Discovery and Development of Optimal Immunotherapeutic Strategies for Childhood Cancers (Project 2)	Children's Hospital of Philadelphia	3201380619 / PO 20031486-RSUB		\$399,348
93-353	Discovery and Development of Optimal Immunotherapeutic Strategies for Childhood Cancers (Project 3)	Children's Hospital of Philadelphia	PO 20031487-RSUB / 3201380619		\$3,901
93-353	Engineering synthetic helper cells that autonomously deliver orthogonal IL-2 to selectively promote therapeutic T cell proliferation in tumors	University of California, San Francisco	126968c / U54 CA244438		\$12,985
93-353	Engineering the next generation of T cells	University Of Pennsylvania	578222 // PO 4643723		\$254,324
93-353	Human Tumor Atlas Network: Data Coordinating Center	Dana-Farber Cancer Institute (489)	1288401		\$101,874
93-353	Immune Monitoring and Analysis of Cancer at Stanford (IMACS)		UCA224309A	\$111,008	\$2,029,647
93-353	Precancer Atlas for Integrative Characterization of ductal carcinoma in situ (DCIS)	Duke University	A030739		\$33,369
93-353	Precancer Atlas of Familial Adenomatous Polyposis		UCA233311A		\$2,793,130
93-353	The Lung PCA: A Multi-Dimensional Atlas of Pulmonary Premalignancy	Boston University	4500003003		\$117,286
93-353	YR 2The Cellular Geography of Therapeutic	Dana-Farber Cancer Institute (505)	1206302		\$287
93-353	YR 3 The Cellular Geography of Therapeutic	Dana-Farber Cancer Institute (505)	1206303		\$146,490
93-361	Biological and Psychosocial Mechanisms of Cancer Caregivers' Elevated Health Risk	University of Miami	PO# SPC-000420; OS00000412		\$30,698
93-361	Genetic variation, stress, and functional outcomes after stroke rehabilitationGenetic variation, stress, and functional outcomes after stroke rehabilitation	University of California, Irvine	2018-3657		\$22
93-361	Severe Maternal Morbidity: An Investigation of Racial-Ethnic Disparities, Social Disadvantage & Maternal Weight		RNR017020A	\$281,693	\$889,080
93-361	The role of genomics in postoperative delirium and sedation	University of California, San Francisco	129658c / R01 NR017622		\$3,378
93-393	(PQ ) Identifying and targeting human glioblastoma migrating in the peritumoral niche		RCA216054A		\$437,744
93-393	Active surveillance and patient reported outcomes in a diverse population of prostate cancer patients	University of California, San Francisco	103498c		\$59,967
93-393	Advancing Science & Policy in the Retail Environment (ASPIRE)	University of North Carolina at Chapel Hill	5112337	\$83,982	\$665,732
93-393	ATP-Dependent Chromatin Remodeling in Human Malignancy		RCA163915C		\$368,193
93-393	Breast Cancer Genetic Study in African-Ancestry Populations	Vanderbilt University Medical Center	VUMC65378		\$13,979
93-393	Characterizing germline and somatic alterations by glioma subtypes and clinical outcome		RCA232754B	\$202,576	\$350,292
93-393	CIPN RoI: Leveraging machine learning to improve risk prediction for chemotherapy induced neuropathy		RCA249127B		\$12,669
93-393	Comparative Modeling of Lung Cancer Prevention and Control Policies	University of Michigan	3003750928; PO# 3005738040		-\$8,366
93-393	Comparative Modeling of Lung Cancer Prevention and Control Policies	University of Michigan	SUBK00012359; PO 3006385830		\$86,359
93-393	Comparative Modeling of Precision Breast Cancer Control Across the Translational Continuum	University of Wisconsin-Madison	0000001105		\$181,455
93-393	Comparative Modeling: Informing Breast Cancer Control Practice and Policy	Georgetown University	GR413979 _GR413979-SU		\$8,235
93-393	Contrast-Enhanced Ultrasound Evaluation of Focal Liver Lesions in Patients with Cirrhosis or Other Risk Factors for Developing HCC	Thomas Jefferson University	080-30000-S27901; #2000072090		\$119,100
93-393	Coverage, Price, and Reimbursement for Multigene Tests for Cancer and Related Conditions	University of California, San Francisco	108568c		\$6,055
93-393	Discovery, Biology and Risk of Inherited Variants in Glioma		RCA217105B	\$256,104	\$550,381
93-393	Epigenetic drivers of cancer progression	Johns Hopkins University	2004395797		\$24,471
93-393	Evaluation of genetic, clinical and environmental risk factors to establish effective screening strategies for second primary lung cancer		RCA226081A	\$104,140	\$734,312
93-393	Focused Ultrasound and Multifunctional Nanoparticle Vaccines as Adjuvant Strategies for Cancer Immunotherapy		KCA234954B		\$81,065

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93-393	Functional and Translational Epigenomics of Acute Lymphoblastic Leukemia		RCA214888A		\$191,983
93-393	Genetic testing, treatment use, and mortality after diagnosis of breast and ovarian cancer: The Georgia-California GeneLINK Initiative		RCA225697A	\$265,280	\$379,824
93-393	Genetics of Prostate Cancer in Africa	Dana-Farber Cancer Institute (489)	Subaward 1242105		\$14,745
93-393	Genomic and Morphologic Predictor of High-Risk DCIS		RCA193694A	\$168,849	\$427,196
93-393	Impact of Affect Reactivity and Regulation on Breast Cancer Treatment Decisions		UCA197282A		\$51,253
93-393	Impact of Retail Tobacco Advertising on Youth Smoking		RCA067850E	\$33,345	\$83,978
93-393	Insights from Asian populations into disparities in breast cancer prognosis and outcomes	University of California, San Francisco	122608c		\$120,250
93-393	Integrative approaches to elucidate p53 transcriptional networks during carcinogenesis		RCA197591A		\$1,011,026
93-393	Leveraging gnotobiotic models to study the gut microbiota and anti-tumor immunity		KCA234946B		\$37,446
93-393	Leveraging Implementation Science to Promote Behavior Change and Reduce Cancer Health Disparities among American Indian and Alaska Native Older Adults		KCA253761B		\$27,022
93-393	lncRNA mechanisms in cancer		RCA209919A		\$1,071,814
93-393	Mary Beth Terry: Core Infrastructure and Methodological Research for Cancer Epidemiology Cohorts	Columbia University	5(GG013725-05)/PO#G14662		\$280,425
93-393	Mary Beth Terry: Core Infrastructure and Methodological Research for Cancer Epidemiology Cohorts	Columbia University	5(GG013725-08)/PO#G15627		\$85,773
93-393	Mechanisms of Cell Cycle and Cell Identity Regulation that Influence Sensitivity to Targeted Therapies		FCA245471A		\$37,398
93-393	Molecular and cellular mechanisms of Merkel Cell Carcinoma development		8-RCA167104A		-\$57
93-393	Molecular and cellular mechanisms of SCLC initiation in mice and in humans		UCA231851A		\$624,716
93-393	Molecular pathoepidemiology of contralateral breast cancer	Fred Hutchinson Cancer Research Center	Subaward 0001029307		\$8,647
93-393	Molecular pathoepidemiology of contralateral breast cancer	Memorial Sloan-Kettering Cancer Center	BD526393A		\$17,941
93-393	Multicenter Randomized Controlled Trial of Brief Behavioral Therapy for Cancer Related Insomnia		RCA239714A	\$152,271	\$598,069
93-393	Optimizing Lung Cancer Treatment in HIV Infected Persons	Icahn School of Medicine at Mount Sinai	0255-2961-4609		\$22,568
93-393	Organoid-Based Discovery of Oncogenic Drivers and Treatment Resistance Mechanisms		UCA217851A		\$942,907
93-393	Pancreatic cancer stem cells:PD2-mediated novel mechanistic link and metabolomic alterations		KCA234962B		\$60,799
93-393	Pediatric Brain Tumor Consortium	St. Jude Children's Research Hospital	110068201-7821844		-\$12,664
93-393	Pediatric Brain Tumor Consortium 56	St. Jude Children's Research Hospital	110068210-7947493		\$77,040
93-393	Practical Implementation of an Ultra-rapid FLASH Radiation Therapy Linac Beamline	TibaRay, Inc.	NIHSBIR-2019-02 / R44 CA217607		\$65,547
93-393	Precancer Atlas for Integrative Characterization of ductal carcinoma in situ (DCIS).	Duke University	A030740		\$243,196
93-393	Predicting Long-Term Chemotherapy-Related Cognitive Impairment	University of Texas at Austin	UTA19-000489		\$137,690
93-393	Project RESIST - Increasing Resistance to Tobacco Marketing Among Young Adult Sexual Minority Women Using Inoculation Message Approaches	University of Pennsylvania	580371		\$37,420
93-393	Project RESIST - Increasing Resistance to Tobacco Marketing Among Young Adult Sexual Minority Women Using Inoculation Message Approaches	University Of Pennsylvania	580371 PO 4602575		\$26,446
93-393	Regulatory Impact on Vape Shops and Young Adults' Use of ENDS	George Washington University	19-M72		\$187,365
93-393	Retail Environment for Tobacco and Marijuana in CA: Impact on College Student Use		RCA217165A	\$36,697	\$385,102
93-393	Reversing Cellular immortality in cancer		RCA197563A		\$968,902
93-393	Role of long non-coding RNAs in sarcoma pathogenesis	University of California, San Francisco	10093SC		\$44,886
93-393	Role of long non-coding RNAs in sarcoma pathogenesis	University of California, San Francisco	101608c		\$21,879
93-393	Role of SETD5 in Chromatin Regulation and Tumorigenesis	University of Texas MD Anderson Cancer Center	3001326346		\$91,433
93-393	Social Media Technology for Treating Tobacco Addiction	University of California, Irvine	2016-3319		\$97,597
93-393	Structural Cell Biology of DNA Repair	Lawrence Berkeley National Laboratory	7336091		\$55,534
93-393	The mechanistic basis for constitutional MLH1 methylation (epimutation)	Cedars-Sinai Medical Center	0001625789		\$125,427
93-393	The prognostic landscape of gender- and ethnicity-specific immune influences on cancer outcomes		RCA238971A		\$157,820
93-393	The regulation of innate immune sensors to control GVHD and GVL after allogeneic hematopoietic stem cell transplantation		KCA245728B		\$10,133
93-393	Theory and methods for mediation and interaction	Harvard University	117202-5120557		\$6,693
93-393	Tobacco Retail Policy Innovation to Reduce Health Disparities	University of California, San Francisco	115728c	\$38,449	\$180,695
93-393	Transitioning to public health enforcement of retail tobacco control policies: Benefits, barriers, and local lessons learned	Washington University in St. Louis	WU-21-350-MOD-1/PO: ST00000700		\$10,000
93-393	Unraveling mechanisms of tumor suppression in lung cancer		RCA234349A		\$742,172
93-393	Using Functional Genomics to Inform Gene Environment Interactions for Colorectal Cancer	Fred Hutchinson Cancer Research Center	0001001614		\$29,195
93-393	Using Functional Genomics to Inform Gene Environment Interactions for Colorectal Cancer	Fred Hutchinson Cancer Research Center	0001039476		\$36,880
93-393	Utilizing Electronic Health Records to Measure and Improve Prostate Cancer Care		RCA183962A		\$43,879
93-393	Very-long Term Neurocognitive Outcomes in Breast Cancer Survivors		RCA172145C	\$154,582	\$231,990
93-393	Virally-induced tumorigenesis controlled by the microbiota	University of Chicago	FP068995		-\$19
93-393	Virally-induced tumorigenesis controlled by the microbiota	University of Chicago	FP068995-02 / R01 CA232882		\$94,067
93-393	Youth perceptions and counter-messages to the e-cigarette retail environment	Washington University in St. Louis	WU-20-454		\$10,025
93-394	"Prospective evaluation of a surgical solution for breast cancer-associated lymphedema".	Fibralign Corporation	R44CA203608-Stanford		-\$136,141
93-394	[18F]-AraG - PET imaging to evaluate immunological response to checkpoint inhibitor therapy (CKI) in patients with advanced solid tumors		RCA240638A		-\$5,690
93-394	3D Dynamic Contrast-Enhanced US for Monitoring Chemotherapy of Liver Metastases		RCA195443A		\$41,182
93-394	A Noninvasive Integrated Genomic Approach for Early Cancer Detection and Risk Stratification after Transplantation		RCA229766A	\$3,244	\$608,830
93-394	A Novel Positron Emission Tomography Strategy for Early Detection and Treatment Monitoring of Graft-versus-host Disease		RCA201719A		\$47,743
93-394	Abbreviated Non-Contrast-Enhanced MRI for Breast Cancer Screening		RCA249893A		\$196,524
93-394	Advanced Development of the MasSpec Pen for Cancer Diagnosis and Surgical Margin Evaluation	University of Texas at Austin	UTA19-001060 / R33 CA229068		\$48,559
93-394	Alizadeh R01 CA233975		RCA233975A		\$558,013
93-394	Amy Herr - Treatment Resistance in Breast Cancer: Cellular-to-Molecular Profiling	University of California, Berkeley	00010696 BB01464994		\$9,492
93-394	Analysis of urine tumor nucleic acids for detection and personalized surveillance of bladder cancer		RCA244526A		\$389,186
93-394	Changing brachytherapy with MRI remnant-tumor segmentation and active-catheter placement	Johns Hopkins University	2004786918		\$26,094
93-394	Chemical Glycoproteomics		RCA200423D	\$2,513	\$12,274
93-394	Chemical Glycoproteomics		RCA200423E		\$46,237
93-394	Circulating Genomic Determinants of Treatment Failure in Hodgkin Lymphoma		RCA257655A		\$187,182

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93-394	Citizen Science to Promote Sustained Physical Activity in Low-Income Communities		RCA211048A		\$587,393
93-394	Computing, Optimizing, and Evaluating Quantitative Cancer Imaging Biomarkers		UCA187947A	\$2,570	\$19,819
93-394	Copper-depleting nanotheranostics for treating triple negative breast cancer		RCA243033A		\$550,301
93-394	COVID-19 - Mechanisms and Duration of Immunity to SARS-CoV-2		UCA260517AC4		\$1,768,993
93-394	COVID-19 - The Lung PCA: A Multi-Dimensional Atlas of Pulmonary Premalignancy	Boston University	4500003813		\$97,802
93-394	DESI-MS detection of positive surgical margins in kidney cancer		RCA229933A		\$53,714
93-394	Distributed Learning of Deep Learning Models for Cancer Research		UCA242879A	\$148,609	\$368,705
93-394	Dual Modality X-ray Luminescence CT for in vivo Cancer Imaging		RCA227713A		\$786,089
93-394	Early therapeutic monitoring of response to therapy with serial ultrasound in metastatic RCC		RCA252776A		\$62,957
93-394	EDRN Prostate MRI Biomarker Study and Reference Set	University of Michigan	SUBK00012223; PO 3006205541		\$34,391
93-394	Evaluation of Patients with Low-Risk and Intermediate-Risk Prostate Cancer Scheduled for High-Dose Rate Brachytherapy Using 68Ga-RM2 PET, 68Ga-PSMA-11 PET and Multi Parametric MRI		RCA230438A		\$339,905
93-394	Exploring a promising design for the next generation time-of-flight PET detector		RCA214669A		\$382,958
93-394	Fluoroscopic Pulmonary Visualization System To Aid in Peripheral Lung Nodule Diagnosis*	Pulmera, Inc.	SPO 140630		\$20,000
93-394	Glycosylation and Immune Evasion in Urologic Tumors		UCA226051A		\$656,994
93-394	HIFU-immunotherapy in pancreatic cancer		RCA253316A		\$689,962
93-394	Identification of serum protein biomarkers by profiling N-glycoproteomes of patient-derived xenografts of clear cell renal cell carcinoma		RCA256271A		\$56,420
93-394	Image-guided ultrasound therapy and drug delivery in pancreatic cancer		RCA210553B		\$238,894
93-394	Imaging and circulating DNA markers to assess early response and predict treatment failure patterns in lung cancer		RCA233578A		\$653,004
93-394	Imaging Biomarkers for Glioma Treatment Response		RCA245097A		\$256,986
93-394	Imaging Modulation of Immune Phenotype		RCA250557A	\$18,835	\$261,042
93-394	Improving Diagnostic US for Reduction of Benign Breast Biopsy Using US-Guided Optical Tomography	Washington University in St. Louis	WU-21-40; PO#2940679K		\$46,178
93-394	Insonation of ultrasound microbubbles at low frequency to enhance image-guided therapy		RCA112356C		\$352,626
93-394	Large aperture and wideband modular ultrasound arrays for the diagnosis of liver cancer		RCA211602B	\$294,581	\$534,239
93-394	Leveraging deep learning for markerless motion management in radiation therapy		RCA256890A		\$164,675
93-394	Making glycoproteomics more accessible to the greater scientific community		UCA207702A		-\$3,521
93-394	Molecular and Therapeutic Basis of Morphometric Aberrations in Brain Tumors	Lawrence Berkeley National Laboratory	7255007		\$1,891
93-394	Molecular Imaging Methods for the Detection of Pancreatic Ductal Adenocarcinoma		UCA210020A	\$109,293	\$980,224
93-394	Molecularly-Targeted Ultrasound in Ovarian Cancer		RCA211932A		\$329,740
93-394	MR-Guided Focused Ultrasound Combined with Immunotherapy to Treat Malignant Brain Tumors		RCA217953A		\$862,154
93-394	MRI-Based Radiation Therapy Treatment Planning		RCA193730A		\$272,855
93-394	Multimodal iterative sequencing of cancer genomes and single tumor cells		RCA247700A		\$112,936
93-394	Multiregional imaging phenotypes and molecular correlates of aggressive versus indolent breast cancer		RCA222512A		\$311,294
93-394	Multi-scale modeling of glioma for the prediction of treatment response, treatment monitoring and treatment allocation		RCA260271A		\$75,484
93-394	Nanoparticle-based Triple Modality Imaging and Photothermal Therapy of Brain Tumors		RCA199656A		\$183,179
93-394	Next Generation Sentinel Node Mapping		RCA238686A		\$409,831
93-394	Optical Imaging to Improve Surgery & Targeted Therapy in Brain Tumors		RCA239257A		\$715,637
93-394	Optimized ultrasound-enhanced immunotherapy		RCA199658B		\$4,608
93-394	Pancreatic Cancer Imaging Repository	University of Texas MD Anderson Cancer Center	3001529436		\$44,387
93-394	Pancreatic Ductal Adenocarcinoma Targeted Ultrasound Contrast Agent Development	NuvOx Pharma LLC	NuvOx SBIR		-\$80,659
93-394	Pathomic Predictors of Prostate Cancer Progression		RCA249899A	\$395,644	\$815,433
93-394	Phase I: Development of a commercial Magnetic Particle Imaging platform for the detection and quantification of localized inflammation in cancer.	Magnetic Insight, Inc.	NC11R43CA233155-01A1		\$5,026
93-394	Predicting Clinical Outcome After Traditional and Ibrutinib-Based Therapy in Chronic Lymphocytic Leukemia	Mayo Clinic	LSJ-203034-01/PO#66674629		\$2,666
93-394	Predicting Clinical Outcomes in Individuals with Small CLL B Cell Clones	Mayo Clinic	LSU-207246-02/PO#66863015		\$3,998
93-394	Predicting Relapse at the Time of Diagnosis in Acute Lymphoblastic Leukemia		RCA251858A		\$73,854
93-394	Prostate Cancer Active Surveillance Study (PASS) Cohort: Infrastructure Support for Cancer Research	Fred Hutchinson Cancer Research Center	0001006792		\$975
93-394	Prostate Cancer Active Surveillance Study (PASS) Cohort: Infrastructure Support for Cancer Research	Fred Hutchinson Cancer Research Center	0001039236		\$29,065
93-394	Prototype optical device for image guided surgery with panitumumab-IRDye800		RCA190306A		-\$23,933
93-394	Qualification and Deployment of Imaging Biomarkers of Cancer Treatment Response		UCA190214A		\$347,650
93-394	Rapid and affordable magneto-nanosensors for ctDNA-guided lung cancer management		RCA257843A		\$52,291
93-394	San Antonio Center for Biomarkers of Risk for Prostate Cancer-Upgrading Reference Set Phase III	University of Texas Health Science Center at San Antonio	169019/168546		\$3,192
93-394	SPO126349 NIH Automated Volumetric Molecular Ultrasound for Breast Cancer Imaging		RCA218204A	\$18,160	\$466,373
93-394	Systematic study of variations in imaging techniques and response criteria for well differentiated pancreatic neuroendocrine tumors	Fox Chase Cancer Center	15150-01		\$6,693
93-394	Systematic study of variations in imaging techniques and response criteria for well differentiated pancreatic neuroendocrine tumors	Fox Chase Cancer Center	15150-02		\$4,549
93-394	The Impact of FUS-Mediated Brain Cancer Therapy on BBB Transport, Cytokines, and Immunocyte Trafficking		RCA227687A	\$44,515	\$646,994
93-394	Therapeutic miRNA Modulation of Hepatocellular Carcinoma Using Ultrasound Guided Drug Delivery		RCA209888A		\$737,935
93-394	Ultrabright Theranostic SERRS Nanoparticles for Gastrointestinal Endoscopy	Memorial Sloan-Kettering Cancer Center	BD523749		-\$18,771
93-394	Ultrasound-enhanced drug penetration for treatment of pancreatic cancer	University Of Washington	UWSC10443 BPO38965		-\$179,539
93-394	Ultrasound-enhanced drug penetration for treatment of pancreatic cancer		RCA154451C	\$94,384	\$575,223
93-394	Validation of Biomarkers for Early Diagnosis and Risk Prediction of Pancreatic Neoplasms	University of Pittsburgh	CNVA00047829 (135513-4)		\$3,190
93-395	(PO8) Biomarker identification by mass cytometry in peripheral blood of patients with renal cell carcinoma undergoing immune checkpoint therapy.		RCA231280A		\$195,365
93-395	Degrading therapeutically important kinases using small molecules		RCA218278B		\$5,068
93-395	A Novel Paradigm for the Development of a Peptide Vaccine to Treat KRAS Mutant Cancers		RCA256452A		\$9,352
93-395	ALK Gray Ro1		RCA136851E		\$6,628
93-395	BIQSFP ANBL1531 Integrated-U10CA180886	Children's Hospital of Philadelphia	PO# 20204620		\$23,290
93-395	BIQSFP ANBL1531 Integrated-U10CA180886	Children's Hospital of Philadelphia	PO#: 20132960 - RSUB		-\$161
93-395	Bone Marrow Grafting for Leukemia and Lymphoma		PCA049605H		\$2,675,745

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

<b>Federal Grantor / Assistance Listing Number</b>	<b>Federal Program Name</b>	<b>Name of Pass-through Entity</b>	<b>Pass-Through Entity Identifying Number/ Additional Award Identification</b>	<b>Amount Passed Through to Subrecipients</b>	<b>Total Federal Expenditures</b>
93.395	COG - PATHOLOGY REVIEW: NIH National Clinical Trials Network (NCTN) Grant (2U10CA180886) Successor to NIH National Clinical Trials Network NCTN Grant (U10CA180886)	Children's Hospital of Philadelphia	PO# 20199259		\$17,845
93.395	COG SCIENTIFIC COUNCIL: NIH National Clinical Trials Network (NCTN) Grant (2U10CA180886) Successor to NIH National Clinical Trials Network (NCTN Grant (U10CA180886)	Children's Hospital of Philadelphia	FP00026529 SUB503 PO#20186619		\$8,696
93.395	COG: PEP-CTN Study Chair grant	Children's Hospital of Philadelphia	FP25505 SUB74_03 20227600-RSUB		\$15,943
93.395	Developing Safe and Effective GD2-CAR T Cell Therapy for Diffuse Midline Gliomas		RCA263500A		\$17,812
93.395	Development of novel protein-based therapeutics for lung cancer	University of California, San Francisco	10698sc		\$28,464
93.395	Development of novel protein-based therapeutics for lung cancer	University of California, San Francisco	10721sc		\$132,606
93.395	Diagnostic Imaging Review: FP00026529 SUB679_01	Children's Hospital of Philadelphia	FP00026529SUB67901/PO#20213508		\$15,016
93.395	Discovering and exploiting mechanisms of neuroblastoma therapy resistance	Children's Hospital of Philadelphia	GRT-00000636 / PO# 20213670		\$286,003
93.395	ECOG-ACRIN Operations Center - Administrative	ECOG-ACRIN Medical Research Foundation, Inc.	U10CA180820-06-STU1A		\$19,990
93.395	ECOG-ACRIN Operations Center - Administrative - ComboMATCH Supplement	ECOG-ACRIN Medical Research Foundation, Inc.	U10CA180820-06-STU2A		\$19,922
93.395	Effects of FLASH Radiation on Cancer and the Immune Response		RCA233958A		\$674,652
93.395	Elucidating Novel Mechanisms Underlying Prostate Cancer Development		RCA230819A		-\$1,253
93.395	Enhancing Cancer Immunotherapy: Targeting the Tumor and Targeting the Host		RCA197353A		\$831,240
93.395	Genetic determinants of NK function	University Of Minnesota	P005569701		\$98,186
93.395	Identifying and targeting treatment-resistant AML subpopulations by high-dimensional functional profiling	Baylor College of Medicine	PO# 7000001194		\$75,682
93.395	Immunotherapy Modeling in Organoids Co-preserving Tumor and Infiltrating Immune Compartments		RCA251514A		\$337,271
93.395	Increasing the therapeutic index of brain tumor treatment through innovative FLASH radiotherapy	University of California, Irvine	2020-1309 / P01 CA244091		\$338,163
93.395	Innovative Cell Therapy for Pediatric Acute Myeloid Leukemia		RCA245468A		\$29,273
93.395	Integral determination of pre- and post-treatment EBV DNA in EBV+	Radiation Therapy Oncology Group	RTOG - STANFORD -SOW#1		\$155,848
93.395	Integrated genomic analysis and multi-scale modeling of therapeutic resistance		RCA182514A	-\$4,984	-\$4,984
93.395	Integrated genomic analysis and multi-scale modeling of therapeutic resistance		RCA182514A		-\$3,475
93.395	Integrated ligand and target discovery by chemical proteomics for glioblastoma treatment.		RCA238249A		\$42,585
93.395	Mechanisms, Prevention and Treatment of Chronic Graft-vs.-Host Disease - Project 1	Dana-Farber Cancer Institute (489)	1153415		\$1,680
93.395	Mechanisms, Prevention and Treatment of Chronic GVHD - Project 3	Dana-Farber Cancer Institute (489)	1272415		\$1,367
93.395	Modeling KRAS-Dependent Synthetic Lethality in Human Colon Organoids		UCA199241A	\$142,817	\$210,194
93.395	Molecular basis of tumor suppression by Cdk4/6 inhibition	University of California, Santa Cruz	A19-0344-S001-P0700755		\$138,101
93.395	Molecularly-based outcome and toxicity prediction after radiotherapy for lung cancer		RCA254179A		\$546,925
93.395	MYC activation in tumor progression of neuroblastoma	Texas Tech University Health Sciences Center	A19-0002-S001		\$22,202
93.395	NCI National Clinical Trials Network (NCTN) - Network Group Operations Centers	NRG Oncology Foundation, Inc.	NRG-Le-GY6		\$6,250
93.395	NCTN High Performing Site Initiative (HPSI)	PPD Development, LP	177003		\$5,662
93.395	New Materials to Deliver mRNA: Applications in Cancer Immunotherapy		RCA245533A		\$652,676
93.395	NK Cells their receptors and cancer therapy	University Of Minnesota	P008703403		\$845
93.395	Noninvasive monitoring of lung cancer patients treated with radiotherapy		RCA188298A		\$60,025
93.395	Novel therapeutic approaches for enhancing anti-tumor immunity SCLC	University of Texas MD Anderson Cancer Center	3001410691		-\$136
93.395	Novel therapeutic approaches for enhancing anti-tumor immunity SCLC	University of Texas MD Anderson Cancer Center	3001610828		\$149,229
93.395	P2-TOPAS - nBIO, a Monte Carlo Tool for Radiation Biology Research	Massachusetts General Hospital	236149 / R01 CA187003		\$110,454
93.395	Pathology Review: NIH COG Chair Grant (U10CA098543)	Children's Hospital of Philadelphia	PO# 20199260		\$41,288
93.395	Patient- and tumor-specific biomarkers and mechanisms that predict irAEs resulting from checkpoint inhibition	Vanderbilt University Medical Center	VUMC74848		\$10,504
93.395	Pediatric Brain Tumor Consortium	St. Jude Children's Research Hospital	110068220-7999160 1156633-100-DHBCB CXLD - PCRBG		-\$24,999
93.395	Pediatric Brain Tumor Consortium CR	St. Jude Children's Research Hospital	110068220-7999160		\$29,001
93.395	Pediatric Brain Tumor Consortium FP	St. Jude Children's Research Hospital	PBTC-055		\$2,028
93.395	Per Case Reimbursement And Patient Studies Funds: Nih Cog Phase 1 Grant (U01CA097452)	Children's Hospital of Philadelphia	FP13560 SUB79_01		-\$5,688
93.395	Phase 1 and 2 Molecular and Clinical Pharmacodynamic Trials ETCTN	Beckman Research Institute Of The City Of Hope	61984.2008185.669303		\$21,512
93.395	Phase I Molecular and Clinical Pharmacodynamic Trials ET-CTN	Beckman Research Institute Of The City Of Hope	52284.2002184.669303		-\$414
93.395	Phase one clinical trial of a novel small molecule EBNA1 inhibitor, VK-2019, in patients with Epstein-Barr positive nasopharyngeal cancer, with pharmacokinetic and pharmacodynamic correlative studies		RCA235633A	\$75,944	\$483,198
93.395	Preclinical Testing of a Novel Therapy Targeting AXL in Advanced Kidney Cancer		RCA198291A	\$12,255	\$265,895
93.395	Radiation-Induced Tumor Cell Migration		RCA197136A		\$132,454
93.395	Radioluminescence dosimetry solution for precision radiation therapy		RCA223667A	\$297,532	\$598,257
93.395	Strategies for Receptor inhibition in immunotherapy		RCA177684B		\$72,125
93.395	SWOG Network Group Operations Center of the NCTN	Oregon Health & Science University	1013080 STANFORD		\$18,275
93.395	Synthetic Studies Related to Cancer Research/Treatment		RCA031845H		\$457,460
93.395	Targeting AXL to overcome resistance to taxanes and platinum-based therapy in castrate resistant and neuroendocrine prostate cancer		RCA245595A		\$227,947
93.395	Targeting colorectal cancer stem cells with ALDH1B1 antagonists		RCA244334A		\$62,109
93.395	Targeting Dectin-2 on tumor-associated macrophages for the treatment of cancer		RCA222969A		\$389,364
93.395	The Radiation Planning Assistant (RPA) for Radiation Therapy in Low- and Middle-Income Countries	University of Texas MD Anderson Cancer Center	3001641499		\$40,263
93.395	The TOPAS Tool for Particle Simulation, a Monte Carlo Simulation Tool for Physics, Biology and Clinical Research	University of California, San Francisco	10824SC / U24 CA215123		\$268,501
93.396	(#6) A novel animal model for determining the role of circadian timing in breast cancer development		RCA231122A		\$594,897
93.396	(PQ4) Quantitative and multiplexed analysis of gene function in cancer in vivo		RCA231253A		\$594,864
93.396	(PQ7)Multi-scale Analysis of Tumor Microenvironment Heterogeneity		RCA208735A		-\$9,311
93.396	A robust platform for multiplexed, subcellular proteomic imaging in human tissue		UCA246633A		\$722,559

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.396	Adipocytes are Important Players in the Acute Lymphoblastic Leukemia Microenvironment	University of California, Los Angeles	1645 G VA145		\$47,738
93.396	Computational tools for understanding chemically modified RNA structure and interactions		RCA219847A		\$41,544
93.396	Delineating developmental programs driving tumorigenesis in triple-negative breast cancer		RCA255450A		\$305,816
93.396	Effect of Radiotherapy on Dendritic Cell Subsets: Implications for Immunotherapy		RCA219994A		\$397,347
93.396	Elucidating the Role of Trop2 in Prostate Cancer		RCA240822A	\$16,552	\$374,741
93.396	Elucidating the Role of UCHL1 in Aggressive Prostate Cancer		RCA244281A	\$18,942	\$475,029
93.396	Epigenetic Mechanisms and Targeting in MLL Leukemia		RCA116606C		\$212,730
93.396	Epigenetic Regulators in Tumor Progression		RCA142635B		\$187,842
93.396	Genetic dissection of oncogenic Kras signaling		RCA230025A		\$64,468
93.396	Human Acute Myeloid Leukemia Stem Cells		RCA251331A		\$333,543
93.396	Identifying and Targeting Mechanisms for Membrane Signaling in Human Cancer	University of California, San Francisco	12578sc		\$322,958
93.396	Inferring the roots of metastases and their effects on patient survival		RCA229991B		\$322,859
93.396	Integrating Omics And Quantitative Imaging Data In Co-Clinical Trials To Predict Treatment Response In Triple Negative Breast Cancer	Baylor College of Medicine	PO #7000001081 / U24 CA226110		\$257,599
93.396	Investigating molecular and cellular mechanisms of SCLC development to identify novel therapeutic strategies		RCA231997A	\$2,857	\$1,006,178
93.396	Investigating the roles of extracellular cGAMP and harnessing it for cancer treatment		RCA258427A		\$196,147
93.396	Macrophage phenotype polarization in clinical neoplasia		RCA229529A		\$530,762
93.396	Measuring and Modulating Oxidative DNA Damage Surveillance Pathways		RCA217809A		\$379,732
93.396	Measuring and Modulating Oxidative DNA Damage Surveillance Pathways		RCA217809B		\$174,031
93.396	Mechanisms of action of the Smdy3 methyltransferase in cancer cells		RCA172560A		-\$157
93.396	Metabolic imaging comparisons of patient-derived models of renal cell carcinoma	University of California, San Francisco	10450sc		\$204,273
93.396	Molecular and cellular mechanisms of SCLC metastasis		RCA206540A	-\$276	-\$276
93.396	Molecular Dissection of an Arntl2 induced pro-metastatic secretome		RCA204620A		\$229,861
93.396	Molecular dissection of Lkb1-mediated tumor suppression		RCA230919A		\$644,413
93.396	Neural Niche in Promoting Brain Metastatic Tumor Progression	University of Notre Dame	204215SU		\$6,977
93.396	Pre-Leukemic Hematopoietic Stem Cells and Clonal Evolution in Human AML		RCA188055A		\$18,026
93.396	Proliferation and Differentiation of Bladder Epithelial Cells in Regeneration and Malignancy		RCA157877B		\$455,367
93.396	Role of extracellular matrix malleability in mediating breast cancer cell invasion and migration		RCA214136A	\$38,139	\$365,992
93.396	Role of the METTL13 Lysine Methyltransferase in Signaling and Cancer		RCA236118A	\$197,888	\$519,059
93.396	Role of the microenvironment in ovarian cancer metastasis	Washington University in St. Louis	WU-20-208-MOD-1; PO 2941417H		\$94,415
93.396	SCH: INT: Collaborative Research: Intelligent Information Sharing: Advancing Teamwork in Complex Care	Harvard University	123977-5100528		-\$237
93.396	SCH: INT: Collaborative Research: Intelligent Information Sharing: Advancing Teamwork in Complex Care		RCA204585B	\$11,168	\$226,559
93.396	Stem Cell Biology, Cancer Stem Cell Biology, and Cancer Immunotherapy		RCA220434A		\$1,028,495
93.396	Targeting Lymph Node Dependent Immune Tolerance in Cancer		RCA251174A		\$294,580
93.396	Targeting the cancer glycocalyx		RCA227942F	\$1,579	\$256,172
93.396	Targeting the MYC Pathway for the Treatment of Cancer		RCA253180A		\$988,893
93.396	The Impact of Mitochondrial Repression and Lipid Accumulation of HIF on Tumor Growth.		RCA197713A	\$36,914	\$803,253
93.396	The RB pathway in liver cancer		8-RCA114102B		-\$121
93.396	Uoi-Molecular and Cellular Characterization Laboratory (RFA-CA-14-010)		UCA196387A		\$974,395
93.396	Ultrasensitive Quantitation of Circulating Tumor DNA		RCA187192B		\$1,123
93.396	Using Protein Interaction Networks and Combinatorial Screens to target KRAS driven cancer		UCA199216A	\$17,692	\$55,337
93.397	A Novel Chimeric Antigen Receptor T-cell Targeting B7-H3 for the Treatment of Osteosarcoma and Ewing Sarcoma	Sarcoma Alliance for Research through Collaboration	SPORE-Y6-CDP-2-STANFORD-MAJZNE		\$9,338
93.397	Arizona Cancer and Evolution Center	Arizona State University	ASUB000000009		\$45,558
93.397	Center for Cancer Nanotechnology Translational Diagnostics (CCNE-TD)		UCA199075A		\$164,579
93.397	Clinical Impact of Molecular Classification of Endometrial Carcinoma	University of Texas MD Anderson Cancer Center	3001524212		\$13,001
93.397	In Vivo Cellular And Molecular Imaging Center At Stanford		PCA114747B		-\$640
93.397	Modeling the Role of Lymph Node Metastases in Tumor-Mediated Immunosuppression		UCA200971A		\$1,862,706
93.397	Phenotype Heterogeneity and Dynamics in SCLC	Vanderbilt University	UNIV60169		\$12,784
93.397	Phenotype Heterogeneity and Dynamics in SCLC	Vanderbilt University	UNIV60169; P21049150		\$112,229
93.397	Project 3: Deciphering Germline and Somatic Genomic Landscape of Gliomas in Black and Hispanic Minority Groups	University of Texas MD Anderson Cancer Center	3001612069		\$18,309
93.397	Project 3: Deciphering Germline and Somatic Genomic Landscape of Gliomas in Black and Hispanic Minority Groups	University of Texas MD Anderson Cancer Center	3001720739 / P50 CA127001		\$109,537
93.397	Stanford University Cancer Center		PCA124435C	\$18,042	\$3,698,833
93.397	Stanford-Colombia Collaboratory on Chronic Disease Prevention		PCA217199A		-\$1,618
93.397	Stanford-Colombia Collaboratory on Chronic Disease Prevention		PCA217199A	\$34,530	\$34,530
93.397	Targeting microenvironmental dependencies for glioblastoma therapy (Project 4)	Brigham and Women's Hospital	122260		\$151,055
93.398	An 18F PET/NIRF Smart Probe for Identifying, Grading, and Visualizing Astrocytic Gliomas		FCA213620A		\$61,119
93.398	Bioengineering programmable and drug-controllable synthetic receptors for tunable CAR-T cell behaviors		FCA257159A		\$11,430
93.398	Canary Cancer Research Education Summer Training (Canary Crest) Program		RCA217729A		\$157,460
93.398	Cancer Associated Fibroblast Clonality, Chromatin Accessibility And Therapeutic Targeting In Pancreatic		FCA239312A		\$27,069
93.398	Cancer Etiology, Prevention, Detection and Diagnosis		TCA0009302I		-\$49,891
93.398	Cancer Etiology, Prevention, Detection and Diagnosis		TCA0009302J		\$511,220
93.398	Cancer immunotherapy using injectable hydrogels for precise and tunable multidrug delivery		FCA247352A		\$62,987
93.398	Cancer-Translational Nanotechnology Training Program (Cancer-TNT)		TCA196585A		\$218,358
93.398	Characterizing the immune and metabolic profiles of cutaneous T-cell lymphoma in formalin fixed paraffin embedded skin tissue samples		FCA233203A		\$85,509
93.398	Defining the Medulloblastoma Cancer Stem Cell Lineage Hierarchy by Notch Family Signaling		FCA228215A		\$45,053
93.398	Development of microfluidic blood-brain tumor barrier model to screen chemotherapeutic strategies for breast cancer brain metastases		KCA201545A		\$135,711
93.398	Dissecting the Mechanism of Acute Myeloid Leukemia Induced Bone Marrow Failure to Identify Therapeutic Interventions		KCA248940A		\$136,339
93.398	Dissecting the Mechanism of Polycomb Eviction by the BAF Complex		FCA243442A		\$60,221
93.398	Do Tumor-Immune Interactions Prime Systemic Tolerance of Triple Negative Breast Cancer (TNBC) Breast-to-Brain Metastases?		KCA256522A		\$17,166
93.398	Dynamic Analysis of Tumor and Microenvironment in Patients Undergoing Immunotherapy		KCA252637A		\$145,094
93.398	Electrical integration of primary and secondary brain cancers into neural circuitry		KCA252001A		\$111,726
93.398	Elucidating mechanisms of mucin-mediated immune regulation in cancer		FCA250324A		\$46,037

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.398	Elucidating the Role of the CLCF1-CNTFR Signaling Axis for Lung Cancer Treatment		FCA236324A		\$42,316
93.398	Engineering Brain Cancer in a Dish: Hydrogel-based 3D in vitro Models for Pediatric Brain Tumor		FCA246972A		\$30,052
93.398	F31: Spatial Transcriptomics through Celltowers		FCA243170A		\$33,506
93.398	Family-building After Cancer: Preferences, Decisions, and Planning for Young Female Survivors		KCA229186B		\$112,694
93.398	Functional Proteomic Analysis and Biomarker Identification in a Novel Mouse Model of Metastatic Hepatocellular Carcinoma (HCC)		KCA222676A		\$200,278
93.398	Harnessing the innate immunotransmitter cGAMP for anti-cancer therapy		FCA239510A		\$34,496
93.398	Identifying Mechanisms of Paracrine cGAMP Signaling in the Tumor Microenvironment		FCA250145A		\$33,506
93.398	Immune targeting of Non-Hodgkin Lymphoma through integrative Antigen Presentation Profiling		KCA207882A		\$120,253
93.398	Integrative subtyping to improve therapeutic options for metastatic hormone receptor-positive breast cancer		KCA252457A		\$156,759
93.398	Lymphoma Antigen Density and Circulating Tumor DNA Profiling As Determinants of Novel CAR Therapies		KCA248968A		\$160,120
93.398	Magnetic Particle Imaging (MPI) for Imaging and Magnetothermal Therapy of Brain Tumors		KCA234208A		\$131,212
93.398	Metabolite sensing through the HAT1 acetyltransferase as an anti-cancer target		KCA245024A		\$116,000
93.398	Molecular Characterization and Personalized Approaches to Non-Hodgkin Lymphoma from Circulating Tumor DNA		KCA241076A		\$153,372
93.398	Molecular mechanisms of NFIB in small cell lung cancer metastasis		FCA257169A		\$30,946
93.398	Molecular pathways associated with BCC to SCC pathway switching		FCA254434A		\$62,708
93.398	Mye promoted changes to the glycocalyx in leukemia		FCA232541A		\$42,355
93.398	Noninvasive Risk Stratification of Prostate Cancer Using Cell-Free Nucleic Acids		KCA230156B		\$273,837
93.398	Postdoctoral Training in the Radiation Sciences		TCA121940B		\$2,239
93.398	PRECISE - a Personalized Risk Score for gastric Cancer		KCA252635A		\$63,948
93.398	Predicting Post-treatment Relapse in Pediatric Acute Myeloid Leukemia Using Single-cell Proteomics		FCA239365A		\$53,324
93.398	Predicting response to anti-PD-1 therapy in triple negative breast cancer by comprehensive profiling of the tumor microenvironment		FCA246880A		\$41,310
93.398	Psychobiological stress vulnerability, executive control, and depression in children and adolescents with cancer		KCA237528A		\$229,548
93.398	Quantifying the sources and dynamics of tumor growth variability using Tuba-seq		KCA226506A		\$17
93.398	Raf-1 As a Regulator of Glutamine Metabolism		FCA257390A		\$8,812
93.398	Repurposing systemic therapies to improve clinical outcomes in advanced basal cell cancer		KCA211793A		\$168,300
93.398	Role of Matrix Viscoelasticity on Tumor-Macrophage Interactions		FCA250405A		\$29,578
93.398	Single cell characterization of human acute myeloid leukemia		FCA250304A		\$80,664
93.398	Single cell epigenomics in cancer immunity and immunotherapy		KCA230188A		\$97,356
93.398	Stanford Cancer Imaging Training (SCIT) Program		TCA009695G		\$417,362
93.398	Stanford Molecular Imaging Scholar - SMIS		RCA118681B		-\$901
93.398	Stanford Molecular Imaging Scholars (SMIS) Program		TCA118681C		\$363,112
93.398	Synthetic Gene Circuits For Monitoring T-Cell Exhaustion		FCA236339A		\$30,429
93.398	Targeting ligand-independent CSF3R dimerization in chronic neutrophilic leukemia		FCA243267A		\$36,470
93.398	Targeting the Major Histocompatibility Class I-LILRB1 signaling axis for cancer immunotherapy by macrophages		FCA232472A		\$21,822
93.398	The role of DNMT3A in gene regulation and stem cell expansion		KCA222736B		\$83,666
93.398	The role of fallopian tube microbiome in ovarian carcinogenesis		KCA222385B		\$81,560
93.398	Therapeutic dissection of genotype-specific lung cancer vulnerabilities		FCA236311A		\$59,266
93.398	Transcription Factors in Intestinal Differentiation and Cancer		KCA212433B		\$111,262
93.398	Tumor and Immune Cell Dynamics during Immunotherapy and Cancer Progression		FCA253729A		\$39,295
93.398	Uniting Mass Spectrometry and Glycoscience to Investigate Cancer Biology		KCA212454B		\$86,437
93.421	COVID-19 - Policy Modeling and Forecasting for Public Health Decision Making	Council of State and Territorial Epidemiologists	7458		\$96,394
93.424	Neurobiology and dynamics of Active Sensing	Columbia University	8(GG012936-04); PO# G14678		\$203,898
93.732	Addiction Medicine Fellowship		20AMF		\$168,839
93.788	Medication Assisted Treatment (MAT) Expansion Project: CA Hub & Spoke System Training and Learning Collaborative	University of California, Los Angeles	2000-S-VN579		\$9,794
93.788	State Opioid Response: Waiver Prescriber Support- Training and Technical Assistance	University of California, Los Angeles	2000-S-YF767		\$74,307
93.837	*Modeling Endothelial Dysfunction in LMNA-related Cardiomyopathy		KHL135455A		\$208,450
93.837	113695 R33 hiPSC-Cardiomyocytes to Screen Variants Predictive of Doxorubicin Cardiotoxicity		RHL123655B		\$45
93.837	ISCHEMIA Trial	New York University	10-01073 / 26C10500NYUPG100422		\$210,960
93.837	Leveraging a Natural Experiment to Estimate the Effects of School Racial Segregation on Cardiovascular Risk Factors among Youth and Young Adults	University of California, San Francisco	12218sc		\$14,057
93.837	A Critical Role for Leukotriene B4 in Lymphedema	Palo Alto Veterans Institute for Research	NIM0013-02		\$133,397
93.837	A New Framework For Understanding The Mechanisms Of Diastolic Dysfunction	Palo Alto Veterans Institute for Research	ENN0001-01		\$245,422
93.837	A New Framework For Understanding The Mechanisms Of Diastolic Dysfunction	Palo Alto Veterans Institute for Research	ENN0001-02		\$233,455
93.837	AIBP Mediates A NOVEL Interplay between cholesterol and Lymphangiogenesis	Houston Methodist Research Institute	15460004-139		\$66,759
93.837	Aldehyde Dehydrogenase Activation for Treatment for Fanconi Anemia		RHL141351A		\$553,883
93.837	Aligned Nanofibrillar Scaffolds Enhance Angiogenesis and Viability in Ischemia		RHL127113A	\$100,000	\$371,096
93.837	American Heart Association Tobacco Center for Regulatory Science (A-TRAC) 2.0	American Heart Association	FX-ATRAC-5U54HL120163-SU-07		\$33,768
93.837	American Heart Association Tobacco Center for Regulatory Science (A-TRAC) 2.0	American Heart Association	FX-ATRAC-5U54HL120163-SU-08		\$12,632
93.837	An evaluation of insomnia treatment to reduce cardiovascular risk in patients with posttraumatic stress disorder	Duke University	A033778		\$7,776
93.837	Anastrozole in Pulmonary Arterial Hypertension: AIPH2	University of Pennsylvania	4450576		\$26,328
93.837	Anastrozole in Pulmonary Arterial Hypertension: AIPH2	University of Pennsylvania	581275 / PO4611165		\$52,898
93.837	Anchored Phosphatase and Transcription Factor Regulation in the Heart	University of Connecticut	UCHC7-98175577		\$2,780
93.837	Angiogenic Bioengineered Systems to Optimize Post-Infarction Myocardial Recovery		RHL089315D		\$610,430
93.837	Biomechanical Optimization of Cardiac Valve Repair Operations		RHL152155A		\$627,540
93.837	Biorepository of Human iPSCs for Studying Dilated and Hypertrophic Cardiomyopathy		RHL117756A	-\$1,657	-\$1,657
93.837	Biorepository of Human iPSCs for Studying Dilated and Hypertrophic Cardiomyopathy		RHL117756A		-\$67,003
93.837	Blood Stem Cell Transplantation as Immunotherapy		PHL075462C	\$21,373	\$1,287,051
93.837	Bridging the gap between mutation & cellular effects: Defining the mechanisms of hypertrophic cardiomyopathy		KHL145020A		\$178,418
93.837	Calcineurin compartmentation and regulation of pathological cardiac remodeling		RHL158052A		\$147,149
93.837	Cardiomyocyte phenotype and mechanotransduction in Filamin C gene variants causing arrhythmogenic cardiomyopathy	University of Colorado Denver	FY20.217.001/2-5-A8857		\$139,459

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.837	Cardiovascular Disease Prevention Training Program		THL007034I		\$513,862
93.837	Causal associations of circulating biomarkers with cardiovascular disease		RHL135313A		-\$328
93.837	Causal variant association mechanisms in TCF21 binding coronary disease loci		RHL134817A		\$333,129
93.837	Causal variant association mechanisms in TCF21 binding coronary disease loci		RHL134817B		\$316,560
93.837	Cavopulmonary Assist to Reverse the Fontan	Indiana University	Sub 8777; PO0255383		\$78,072
93.837	Cell Characterization and Imaging for Regenerative Therapies in Ischemic Diseases	Indiana University	IN-4688172-LSJU PO0075785		\$980
93.837	Cholesterol Regulation of Lysosomes		RHL134991A		\$257,495
93.837	Chronic Hypertension and Pregnancy (CHAP)	University Of Alabama In Birmingham	000503570-SC006		\$2,577
93.837	Chronic Hypertension and Pregnancy (CHAP)	University Of Alabama In Birmingham	000503570-SC006-ELs		\$9,029
93.837	Chronic Hypertension and Pregnancy-CHAP Clinical Coordinating Center	University Of Alabama In Birmingham	000503570-SC006		\$3,729
93.837	Clinical Microfluidic Assessment of Red Blood Cell Adhesion, Deformability, Density, Cellular Hemoglobin Expression, and Blood Rheology for Curative Therapies in Sickle Cell Disease	Case Western Reserve University	RE5515113		\$230,296
93.837	Clonal expansion, resistance to efferocytosis and innate immunity in atherosclerosis		RHL144475A		\$778,951
93.837	Comprehensive CT Imaging for Optimization of Coronary Artery Bypass Graft Surgery		RHL141712A	\$63,088	\$448,971
93.837	Coronary Magnetic Resonance Angiography		RHL127039B		\$291,224
93.837	COVID-19 - Genome Editing of Human iPSCs to Study Inherited Hypertrophic Cardiomyopathy		RHL126527B		\$22,759
93.837	Curcumin Supplementation for Improving Vascular and Cognitive Function in Chronic Kidney Disease	University of Iowa	W001052426 -1001936977		\$22,053
93.837	Deep Neural Networks to Treat Atrial Fibrillation		KHL145017A		\$213,534
93.837	Delineating the Genetic Susceptibility of Smoking-Induced Vascular Dysfunction		RHL150319A		\$116,495
93.837	E-cigarette aerosol effects on the cardiovascular system in rodents		RHL144388A		\$502,067
93.837	Elucidating Electro-Mechanical Dysfunction in Heart Failure with Human Stem Cell Models		PHL141084A	\$920,425	\$2,104,404
93.837	Elucidating Genotype-Phenotype Relationship of Polygenic Dilated Cardiomyopathies		RHL130020B		\$647,412
93.837	Elucidation of the Development and Function of the Cardiac Conduction System		KHL153785A		\$142,100
93.837	Emerging Opportunities in Cardiovascular Disease		RHL154524A		\$10,000
93.837	Engaging self-regulation targets to understand the mechanisms of behavior change and improve mood and weight outcomes	University of Illinois at Chicago	17357-01; 1228234-300-EAFGS		\$103,969
93.837	Engineered matrix microarrays to enhance the regenerative potential of iPSC-derived endothelial Cells		RHL142718A		\$248,930
93.837	Engineered Protein Hydrogels to Modulate Adipose-derived Stromal Cell Secretome and Exosomes for Injectable Myocardial Infarction Therapy		RHL138042A		\$16,286
93.837	Escalating Proportion of Weight-Loss Maintainers Via Modules Prior to Weight Loss		RHL128666A	\$4,411	\$352,286
93.837	Evaluating the Benefit Of Concurrent Tricuspid Valve Repair During Mitral Surgery	Icahn School of Medicine at Mount Sinai	0255-3100-4605		-\$63,547
93.837	Evidence Based Evaluation and Acceptance of Donor Hearts for Transplantation		RHL125303A	\$72,621	\$105,152
93.837	FELLOWSHIP-Albert J. Pedroza-Developmental basis for vascular smooth muscle cell dysfunction in Marfan syndrome aortic aneurysm		PHL154681A		\$71,440
93.837	Genetic and Stem Cell Model of Cardiac Metabolic Disease		RHL146690A		\$615,710
93.837	Genetics of Hypoplastic Left Heart Syndrome and Aortic Valve Disease	J. David Gladstone Institutes	SC-00012		\$1,507
93.837	Genome Editing of Human iPSCs to Study Inherited Hypertrophic Cardiomyopathy		RHL126527B		\$433,005
93.837	Genome-wide association study of coronary artery disease in individuals of African ancestry	Vanderbilt University Medical Center	VUMC87372		\$89,486
93.837	Gut Microbiota and Cardiometabolic Diseases/ Project 3: Discovery, enzymatic source and characterization of novel microbiota-derived metabolites in cardiometabolic diseases	Cleveland Clinic Foundation	1393-SUB		\$24,529
93.837	Gut Microbiota and Cardiometabolic Diseases/ Project 3: Discovery, enzymatic source and characterization of novel microbiota-derived metabolites in cardiometabolic diseases	Cleveland Clinic Foundation	1393-SUB / P01 HL147823		\$442,091
93.837	Harnessing Big Data to Identify Effective Peripheral Artery Disease Treatments in Chronic Kidney Disease		RHL151351A		\$89,146
93.837	High-Throughput Screens to Discover Novel Inhibitors of Leaky RyR2 for Heart Failure Therapy	University Of Minnesota	N006353702		\$404,368
93.837	Human Induced Pluripotent Stem Cells for Cardiovascular Disease Modeling		RHL113006C		\$611,438
93.837	Human iPSC Model for Elucidating Crosstalk Signaling and Secretomes		RHL141371A	\$20,156	\$320,446
93.837	Human iPSCs for Elucidating Stress-mediated Paracrine Signaling in Dilated Cardiomyopathy		PHL152483A		\$62,304
93.837	Identification of Causal Antigens in Immune Checkpoint Inhibitor-Induced Myocarditis		PHL149188A		\$14,606
93.837	Identification of causal coronary heart disease variation in smooth muscle cells		RHL120757B		\$36,121
93.837	Identifying angiocrine factors for cardiomyocyte maturation using single-cell sequencing		KHL150216A		\$135,716
93.837	Identifying tobacco-genetic interactions through study of the aryl hydrocarbon receptor pathway		RHL151535A		\$148,202
93.837	Imaging of mitochondrial function of progenitor cells transplanted to the ischemic myocardium	Mayo Clinic	STA-213113-05; PO# 67317074		\$18,052
93.837	Impact of Water Access on Child Food and Beverage Intake and Obesity		RHL129288B	\$174,310	\$281,150
93.837	Improve PAD Performance with METformin: The PERMET Trial	Northwestern University	60045563 SU / R01 HL131771		\$14,527
93.837	Improving Tissue Engineered Vascular Graft Performance via Computational Modeling	Research Institute at Nationwide Children's Hospital	700151-1120-00;PO 4604347-0-46		\$23,585
93.837	Improving Tissue Engineered Vascular Graft Performance via Computational Modeling	Research Institute at Nationwide Children's Hospital	700151-1121-00; PO# 4605919		\$60,312
93.837	Injectable Hydrogels to Deliver Gene Therapy for Myocardial Infarct		RHL151997A		\$394,865
93.837	Integrative multi-omics in whole genome studies of HLBS disorders		RHL142015A		\$237,106
93.837	International Consortium for Multimodality Phenotyping in Adults with Noncompaction		RHL146754A	\$2,241	\$152,125
93.837	Investigating the Role of Dact1 in Artery Specification and Collateral Artery Development		PHL147410A		\$16,225
93.837	Investigating the Role of Shear Stress in Coronary Artery Development		PHL154514A		\$62,848
93.837	lncRNA Transcriptional Mechanisms of Coronary Artery Disease Risk		RHL145708A		\$350,944
93.837	Machine Learning in Atrial Fibrillation		RHL149134A		\$412,318
93.837	Mechanical circulatory support: Measures of adjustment and quality of life	Northwestern University	60043010 TLSJU		-\$241
93.837	Mechanism of the coronary heart disease association at chromosome 6q23.2		RHL109512B		\$128,015
93.837	Mechanotransduction and transcriptional regulation during artery development		RHL128503B		\$656,218
93.837	Mediators of Systemic Inflammation and Heart Failure Risk in the Community	Cedars-Sinai Medical Center	1572381		\$164,824
93.837	Mendelian randomization of dietary intakes in the UK Biobank		PHL149254A		\$76,318
93.837	META - Mentor, Educate, Train, Advocate: Patient Oriented Researchers in Cardiometabolic Disease		KHL150476A		\$123,078
93.837	Metabolic Underpinnings of AL Amyloid Cardiomyopathy		RHL128135B		\$10,866
93.837	MicroRNA Control of Dilated Cardiomyopathy		RHL130840A		-\$8,062
93.837	miR-152: A Novel Regulator of Diabetic Cardiomyopathy		RHL104002C		-\$20,259
93.837	Modeling Susceptibility to Chemotherapy-Induced Cardiotoxicity Using Human iPSCs		RHL123968B	\$3,778	\$501,631

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

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93.837	Modeling Tyrosine Kinase Inhibitor-Induced Vascular Dysfunction Using Human iPSCs		RHL141851A	\$11,398	\$880,287
93.837	Molecular Characterization of Cardiomyopathy Mutations in Human Cardiac Myosin	University of Colorado	RHL117138C/1556322/1001023086		\$146,707
93.837	Molecular Imaging of Cardiac Pluripotent Stem Cells		RHL133272A		\$223,925
93.837	Molecular mechanisms underlying flow sensing in lymphatic endothelial cells		RHL128779A		-\$9,243
93.837	Molecular phenotyping for autopsy-defined sudden cardiac death	University of California, San Francisco	126368c		\$41,978
93.837	Motivational Determinants of Postpartum Lifestyle Behaviors, Weight Retention, and Metabolic Syndrome	University of California, Davis	A20-3069-S003		\$18,960
93.837	Mulan: A Novel Regulator of Mitochondrial Dynamics, Mitophagy, and Heart Function		RHL132511B	\$301,170	\$382,698
93.837	Multicenter International Durability and Safety of Sirolimus in LAM Trial (MIDAS) Clinical Study	LAM Foundation	MIDAS Site Agreement - 1		\$2,397
93.837	Multimodality Molecular Imaging of Stem Cell Therapy for Ischemic Cardiomyopathy		RHL134830A		\$462,146
93.837	Multiscale modeling for vein graft failure risk stratification in CABG patients		RHL123689B		\$1,109
93.837	Nanoscale extracellular matrix alters endothelial function under disturbed flow		FHL131114A		-\$515
93.837	Neurometabolic Outcomes of Different Cardiopulmonary Bypass Strategies		RHL152757A		\$373,226
93.837	NHLBI R01		RHL144555A		\$792,438
93.837	NHLBI Undergraduate URM Summer Research Program		RHL147666A		\$81,507
93.837	Novel Atrial Fibrillation Phenotypes Defined by Functional-Anatomical, Machine-Learned Classifications		FHL144101A		-\$346
93.837	Novel Computational Methods for Detecting Early Right Ventricular Failure in the Tetralogy of Fallot Population		FHL154529A		\$61,211
93.837	Novel Conditioning for Hematopoietic Stem Cell Transplantation for Sickle Cell Disease: Use of an Antibody that Targets CD117		OHL152830A		\$388,472
93.837	Optogenetic Engineered Heart Muscle for Disease Modeling		KHL130608A		\$114,501
93.837	Patient Oriented Research in Cardiovascular Regeneration		KHL130553A		\$79,669
93.837	Patient Specific Induced Pluripotent Stem Cell Derived Cardiomyocytes to Define Mechanisms of Electrical-Mechanical Dysfunction in Dilated Cardiomyopathy".		KHL135343A		\$214,732
93.837	Patient-Directed Computational Analysis of Atrial Fibrillation	University of California, San Diego	131549675 PO S9002618		\$174,309
93.837	Patient-Specific Induced Pluripotent Stem Cells for Modeling Single Ventricle Congenital Heart Disease		KHL148553A		\$66,531
93.837	Patient-specific modeling of metabolic dysfunction in statin-induced myopathy using iPSC-derived myocytes		KHL148540A		\$125,388
93.837	PCSKo Inhibition after Heart Transplantation		RHL139929B		\$333,835
93.837	PDGFD regulates a transcriptional network to modulate smooth muscle cell transition and disease risk		RHL156846A		\$137,472
93.837	Perinuclear cAMP in Cardiac Hypertrophy	University of Connecticut	UCHC7-144253915		\$26,183
93.837	Physical Activity to Improve CV Health in Older Women: A Pragmatic Trial	Fred Hutchinson Cancer Research Center	0001053502		\$778,540
93.837	Physical Activity to Improve CV Health in Women: A Pragmatic Trial CCC-Lead		UHL122280A		\$29,898
93.837	Precision Medicine by Harmonizing Real World Evidence and RCT Data		RHL089778D	\$108,398	\$252,720
93.837	Precision Medicine for Dilated Cardiomyopathy in European and African Ancestry	Ohio State University	GR119789 /SPC-1000004291		\$19,452
93.837	Preeclampsia to Cardiovascular Disease: Life-course Analysis of Biomarkers and Risk		RHL139844A	\$108,957	\$1,497,410
93.837	Production of a GMP lot of AAV6	Beckman Research Institute Of The City Of Hope	PO# 3000201679		\$1,955,222
93.837	Protein Kinase C Isozymes in Ischemic Heart		RHL052141G		\$606,747
93.837	RE-ENERGIZE FONTAN - RandomizEd Exercise INtervention desiGned to MaximIze Fitness in Pediatric FONTAN patients		RHL146775B		\$339,590
93.837	Regulation of Histone Deacetylases by mAKAP Signalingosomes		RHL146111A	\$90,040	\$512,125
93.837	Regulation of Inflammation and Atherosclerosis by TCF21		KHL133375A		\$162,022
93.837	RE-ENERGIZE FONTAN - RandomizEd Exercise INtervention desiGned to MaximIze Fitness in Pediatric FONTAN Patients		RHL146775A	\$25,872	\$561,928
93.837	Role of SMAD3 in Smooth Muscle Phenotypic Modulation and its role in Coronary Artery Disease		FHL143847A		-\$6,699
93.837	Role of Zeb2 in modifying genetic risk of coronary artery disease		KHL153798A		\$151,628
93.837	Shear stress and light-field to elucidate the initiation of cardiac outflow tract	University of California, Los Angeles	1564 G YA759		\$11,015
93.837	Single Cell Sequencing of Human iPSC-CM Subtype Identity and Function		RHL145676A		\$747,987
93.837	Single-cell analysis of the heart in myotonic dystrophy		FHL154597A		\$64,356
93.837	Small Molecule NOTCH Inhibitors for the treatment of pulmonary hypertension		RHL132225A		-\$34,309
93.837	Small Molecule NOTCH Inhibitors for the treatment of pulmonary hypertension		RHL132225A	\$242,594	\$242,594
93.837	Stanford BSSR Pre-Doctoral Training Program at the Intersection of Behavioral, Data and Population Health Sciences		THL151323A		\$152,851
93.837	Stanford Career Development Program in Omics of Lung Diseases		KHL120001B		\$2,359
93.837	Stanford Training Program in Lung Biology		THL129970A		\$255,487
93.837	Structural and dynamic analysis of GRK interaction with G protein-coupled receptors	Thomas Jefferson University	080-02000-S29101.P02000077205		\$379,697
93.837	Structure function relationships from deep mutational scanning in human cardiomyopathy		RHL144843A		\$1,106,121
93.837	Studying guinea pig development to discover how natural collateral arteries form		RHL157827A		\$82,957
93.837	SURPASS: (Statin Use and Risk Prediction of Atherosclerotic Cardiovascular Disease in minority Subgroups)		KHL144607A		\$73,865
93.837	T Cell Immunity in Giant Cell Arteritis		RHL142068A		\$127,556
93.837	T32 Training Program in Mechanisms and Innovation in Vascular Disease		THL098049C		\$351,226
93.837	Targeting cardiovascular events to improve patient outcomes after sepsis	Boston University	4500002816		\$36,481
93.837	Targeting the genotype to phenotype link in HCM as a therapeutic strategy		RHL152055A		\$290,874
93.837	Technology Innovations for Supporting Health Among Alaska Native People		RHL117736A	\$343,137	\$344,075
93.837	Th SMAD3 signaling network in coronary artery disease risk		RHL139478A		\$433,018
93.837	The Dynamics of Human Atrial Fibrillation		RHL083359C	-\$851	-\$851
93.837	The Dynamics of Human Atrial Fibrillation		RHL083359D	\$80,468	\$549,929
93.837	The Effect of Estrogen on Cardiac Arrhythmic Propensity		KHL143211A		\$104,400
93.837	The Effect of Value-based Payment on Heart Failure Quality of Care (Value-HF)		KHL151672A		\$131,029
93.837	The LIMiting AAA with meTformin (LIMIT) Trial		RHL146835A		\$616,669
93.837	The NOTCH Signaling Pathway in Large Vessel Vasculitis		RHL117913A		\$88,686
93.837	The Pilot Project	University Of South Carolina	20-3899 PO#2000048662		\$79,078
93.837	The Role of 3-Dimensional Genome Integrity In Cardiac Laminopathies		RHL150414A		\$404,921
93.837	The Role of Inflammation in Cardiovascular Disease	Vanderbilt University Medical Center	VUMC 59050		\$802
93.837	The Role of Inflammation in Cardiovascular Disease	Vanderbilt University Medical Center	VUMC59050		\$108,292
93.837	The Role of Inflammation in Cardiovascular Disease	Vanderbilt University Medical Center	VUMC62891		\$14,160
93.837	The role of mitochondrial DNA mutations in chemotherapy induced cardiomyopathy		FHL154644A		\$31,835
93.837	The Role of RBM20 Sequence and Expression in Dilated Cardiomyopathies		KHL143185A		\$187,613
93.837	The Role of Sarcomeric Protein Alignment in Connexin 43 Localization at Gap Junction		FHL142205A		\$53,693



**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.837	The role of the gut microbiome-host metabolome interactions in heart failure-related insulin resistance		FHL143916A		\$5,447
93.837	The WHI Strong and Healthy Silent Atrial fibrillation Recording study (WHISH STAR)		RHL136390A	\$152,419	\$492,046
93.837	Training in Myocardial Biology at Stanford (TIMBS)		THL094274B		\$243,629
93.837	Trans-omics elucidation of genetic architecture underlying cardiovascular and HLBS diseases		RHL142017A	\$248,378	\$381,611
93.837	Tweet4Wellness: Development and RCT of Mobile Social Support Groups for Sedentary Behavior Reduction		KHL136702A		\$148,788
93.837	Understanding the Mechanisms of Ventricular Dysfunction in Hypoplastic Left Heart Syndrome		FHL149152A		\$37,300
93.837	Unraveling the pathogenesis of familial dilated cardiomyopathy towards precision medicine		RHL139679A		\$459,608
93.837	Using artificial intelligence to enable early identification and treatment of peripheral artery disease		KHL148639A		\$205,565
93.837	Using Atrial Mechanics To Identify Fibrosis In Patients with Atrial Fibrillation		RHL152256A	\$60,354	\$400,173
93.837	Using Deep Learning to Predict Induced Pluripotent Stem Cell-Derived Cardiomyocyte (iPSC-CM) Differentiation Outcomes		FHL156478A		\$8,448
93.837	Validating Cardiac MRI Biomarkers and Genotype-Phenotype Correlations for DMD		RHL131975B	\$245,535	\$447,916
93.837	Validation of Cancer Prevention and Control Using Smartphones, Cognitive	Vignet Inc.	HHSN261201700003C	\$58,491	\$179,337
93.837	WHISH 2 Prevent Heart Failure	Care New England Health System	5001191-Stefanick		-\$16
93.837	WHISH 2 Prevent Heart Failure	Care New England Health System	5001381-STEFANICK		\$14,328
93.837	Whole Genome Sequence Analysis	Fred Hutchinson Cancer Research Center	0001022170		\$18,335
93.837	Whole-genome sequencing analysis of coronary atherosclerosis and related traits	University of Texas Health Science Center at Houston	SA0000633		\$58,159
93.838	1/1: Arrest Respiratory Failure Due To Pneumonia (Arrest Pneumonia)		UHL141722A	\$244,263	\$306,279
93.838	1/1: Arrest Respiratory Failure Due To Pneumonia (Arrest Pneumonia)		UHL141722B	\$415,577	\$1,062,628
93.838	133420_R01_Desai_Identifying niche factors regulating distinct properties of AT2 stem cells		RHL142549A		\$422,255
93.838	2/2 ARREST RESPIRATORY FAILURE DUE TO PNEUMONIA (ARREST PNEUMONIA)		UHL141727A		\$366,875
93.838	2/2 Ganciclovir to Prevent Reactivation of Cytomegalovirus in Patients with Acute Respiratory Failure and Sepsis	Fred Hutchinson Cancer Research Center	0001074306		\$15,694
93.838	A critical role for macrophage ferroptosis in promoting fungal invasion in lung transplant recipients		RHL157414A		\$156,510
93.838	A Mechanistic Clinical Trial of JAK Inhibition to Prevent Ventilator-induced Diaphragm Dysfunction		RHL148185A		\$473,003
93.838	A novel microfluidic platform to study exosome biology in PAH.		RHL156761A		\$45,589
93.838	A universal genome editing strategy to develop an airway stem cell therapy for cystic fibrosis		KHL151900A		\$82,428
93.838	Air pollution disrupts Inflammasome Regulation in HEart And Lung Total Health (AIRHEALTH)		PHL152953A		\$831
93.838	An Anesthesia-Centered Bundle to Reduce Postoperative Pulmonary Complications: The PRIME-AIR Study	Massachusetts General Hospital	236660		\$90,799
93.838	Biased Targeting of GPCR Signaling in Airway Disease	Thomas Jefferson University	080-02000-Z69104		\$112,681
93.838	CLOVERS Trial	University of California, San Francisco	10641sc		\$1,684
93.838	COVID-19 - California Alliance (STOP COVID-19 CA)	University of California, Los Angeles	1790 G YA230 / OT2 HLI56812		\$110,843
93.838	COVID-19 - Post Acute Sequelae of SARS-COV-2 Infection Initiative (PASC)	NYU Langone Health System	27-01, PO_ID: M210458139		\$43,562
93.838	Diverse Homeostatic Roles for Distinct Macrophages in the Developing Lung Vasculature		RHL155828A		\$164,128
93.838	Elafin Therapy for Lung Diseases		PHL108797B	\$987,406	\$1,975,341
93.838	Endothelial Injury, BMPR2 Dysfunction and Macrophage Activation Cause EndMT and PAH		RHL138473A	\$284,316	\$410,079
93.838	Endothelial toll-like receptor 3 in the pathogenesis and therapy of pulmonary arterial hypertension	Ohio State University	GR118945 / PO# SPC-1000004075		\$5,889
93.838	Endothelial-pericyte interactions in the pathogenesis of pulmonary arterial hypertension		RHL139664A		\$331,574
93.838	FLWSHIP M.Scott, PI P.Khatri-Role of cleaved H3 as a key epigenetic regulator of macrophages in idiopathic pulmonary fibrosis		FHL149252A		\$40,107
93.838	Genetic and Molecular Dissection of Pulmonary Neuroendocrine (NE) Cell Development and Function		KHL129081A		\$44,968
93.838	Genetic Disorder of Mucociliary Clearance	University of North Carolina at Chapel Hill	5119020		\$47,795
93.838	HIF-1 mediated vascular integrity limits Aspergillus invasion in airway rejection		KHL122528A		\$39,789
93.838	High Shear Stress Alters Gene Regulation in Pulmonary Arterial Hypertension		RHL152134A		\$251,949
93.838	Hydrocortisone for BPD Respiratory and Development Outcomes Study (HYBRID Outcomes Study): Clinical Coordinating Center	Children's Hospital of Philadelphia	3200930821/ PO#20244901		\$20,162
93.838	Hydrocortisone for BPD Respiratory and Development Outcomes Study (HYBRID Outcomes Study): Clinical Coordinating Center	Children's Hospital of Philadelphia	GrantID 3200930820/PO 20176173		\$877
93.838	Immune Checkpoint inhibitors as Antifibrotic Therapy for Idiopathic Pulmonary Fibrosis		KHL143143A		\$142,673
93.838	Immunometabolic phenotypes in adult severe asthma and disease progression	Brigham and Women's Hospital	122869		\$125,975
93.838	Immunometabolic phenotypes in adult severe asthma and disease progression	Brigham and Women's Hospital	1229525-300-EAFGS		\$43,282
93.838	Impact of Early-in-life Disruption of Lung Development on Adult Lung Progenitor Function	University of California, San Diego	KR 703867		\$56,296
93.838	Long Term Follow up of the Lung Transplant Outcomes Group Cohort	University Of Pennsylvania	579545 PO 4519325		\$52,095
93.838	Molecular characterization of pulmonary edema: a window to an injured lung		RHL152083A		\$87,544
93.838	MRI Methods for High Resolution Imaging of the Lung	University of California, San Francisco	10923SC		\$260,823
93.838	Multicenter Interventional Lymphangioleiomyomatosis Early Disease Trial (MILED)-CCC	University of Cincinnati	010575-009		\$9,607
93.838	Optimizing Surgical Transplant of CFTR Gene-Corrected Human Basal Stem Cells to the Upper Airway		RHL151677A		\$244,148
93.838	Outcomes Related to COVID-19 treated with Hydroxychloroquine among In-patients with symptomatic Disease (ORCHID)	University of California, San Francisco	12199sc		\$12,344
93.838	Pathogenesis of Pf Bacteriophages in Pseudomonas Cystic Fibrosis Lung Infections		RHL148184A		\$452,615
93.838	PD1 Pathway in ARDS	Benaroya Research Institute at Virginia Mason	0164101803		\$9,792
93.838	PETAL-Prevention and Early Treatment of Acute Lung Injury	University of California, San Francisco	9016sc		\$30,004
93.838	Population-level Pulmonary Embolism Outcome Prediction with Imaging and Clinical Data: A Multi-Center Study		RHL155410A		\$2,100
93.838	Proteomic and Transcriptomic Biomarkers of Circadian Timing		RHL148704A	\$195,901	\$241,324
93.838	Pulmonary Complications in a Birth Cohort after a Randomized Trial of Antenatal Corticosteroids ("ALPS Follow-Up") Capitation Contract	George Washington University	Clinical Center 32		\$9,641
93.838	Pulmonary Complications in a Birth Cohort after a Randomized Trial of Exposure to Antenatal Corticosteroids: the ALPS Follow-Up Study	George Washington University	S-ALP2021-CF32		\$19,644
93.838	Pulmonary Hypertension In Genetically Modified Mice		RHL074186D		\$491,670

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.838	R38 Stanford Integrated Cardiovascular/Pulmonary Residency Research Training Program		RHL143615A		\$186,620
93.838	Reclassifying Pulmonary Arterial Hypertension with Machine Learned Immune Phenotypes		KHL151892A		\$168,229
93.838	Stanford Training Program in Lung Biology		THL129970B		\$26,726
93.838	Suppression of basophil activation by IgE glycovariants		RHL141493A	\$132,046	\$365,399
93.838	Targeting Novel BMPR2 modifiers in Pulmonary Hypertension with Repurposed Drugs		RHL128734A		\$264,580
93.838	The BMP-PPARgamma Axis and Pulmonary Hypertension		RHL087118C		\$520,212
93.838	The GOLD Study: Goal of Open Lung Ventilation in Donors	Vanderbilt University Medical Center	VUMC 44300		\$17,076
93.838	The Wnt7a/ROR2 axis in the pathogenesis of pulmonary arterial hypertension		RHL134776A		\$485,544
93.838	Therapeutic Rescue of a Deficient BMPR2 Hypoxic Response in Pulmonary Arterial Hypertension		KHL145097A		\$101,245
93.838	Understanding and targeting molecular as well as structural events governing right ventricular adaptation, failure and recovery in pulmonary hypertension using repurposed drugs		RHL158868A		\$1,674
93.839	A synthetic hematopoietic stem cell niche to investigate stemness and hematopathologies		KHL150218A		\$99,329
93.839	Biochemistry of Platelet Desialylation		KHL156029A		\$32,134
93.839	BMT Clinical Trial Network at Stanford		UHL069291E		\$141,304
93.839	Clonal hematopoiesis in human aging and disease		DHL157540A		\$593,131
93.839	Clonal hematopoiesis in the Women's Health Initiative	Fred Hutchinson Cancer Research Center	0001028640		\$68,120
93.839	CMP-Neu5Ac: A Central Molecule in Bleeding Diseases and Mediator of a Novel Platelet Effector Function		FHL149341A		\$56,142
93.839	Effect of Blood Transfusion Practices on Cerebral and Somatic Oximetry		RHL122167A	\$62,288	\$149,987
93.839	Epigenetic, Transcriptional, and Microenvironmental Determinants of Human HSC Self-Renewal		RHL142637A		\$325,555
93.839	Hepatic Gene Transfer for Treatment of Hemophilias A & B		RHL064274E		\$537,577
93.839	Homologous Recombination Mediated Gene Correction for the Hemoglobinopathies		RHL135607A		\$624,847
93.839	Identifying critical erythrocyte host factors for Plasmodium falciparum malaria		DHL137186A		\$677,539
93.839	Immunosuppressive human invariant natural killer T cells for prevention of graft-versus- host disease		KHL151809A		\$155,449
93.839	Innate cellular responses against Adeno-associated virus in hematopoietic stem and progenitor cells influence cell survival and repopulation capacity		FHL154667A		\$57,939
93.839	Investigating the role of the Neogenin-1/Netrin-1 axis in aging and lineage bias of hematopoietic stem cells (HSCs)		FHL147460A		\$39,087
93.839	Modulating HSC-niche interactions to understand aging and improve transplantation		RHL147124A		\$378,132
93.839	Molecular targeting of erythroid progenitor cells in normal and disordered human erythropoiesis	Feinstein Institute for Medical Research	GRT1900016:AWD00001008-Stanford		\$242,185
93.839	Program in Translational and Experimental Hematology		THL120824B		\$303,233
93.839	Training Program in Hematopoietic Cell Transplantation		THL007952D		\$173,882
93.839	Transfusion of Prematurity Early School Age Follow up (TOP 5) CCC	University of Iowa	S00706-02		\$1,464
93.839	Transfusion of Prematurity Early School Age Follow up (TOP 5) CCC	University of Iowa	S00706-03		\$38,277
93.840	Implementing Blood Transfusion Recommendations in Critically Ill Children	Washington University in St. Louis	WU-19-33; PO# 2934074G		\$26,730
93.846	Advanced MR Imaging of Early Osteoarthritis		KAR062068C		\$118,668
93.846	AMP RA/SLE Leadership Center		UAR067678A	\$294,245	\$386,827
93.846	BEG4/MIM Function in Epithelial Neoplasia		KAR052785B		-\$208
93.846	Can hydroxychloroquine prevent preeclampsia and preterm delivery in lupus pregnancy?		KAR077103A	\$127,474	\$365,231
93.846	Cell-Based Autogenous Grafting for the Treatment of Femoral Head Osteonecrosis	Johns Hopkins University	2004209304		\$44,743
93.846	Characterization of Chronic Pain and its Biopsychosocial Mechanisms in Lupus using Electronic Health Records		KAR079039A		\$26,991
93.846	Chromatin Dynamics During Epithelial Commitment		KAR073170A		\$662,806
93.846	Customized MSCs to Enhance Healing of Bone Defects		KAR073145A		\$602,637
93.846	Determining how cell growth triggers cell division in epidermal stem cells		KAR079860A		\$35,414
93.846	Developing and Testing a Tool for Preference Elicitation in Carpal Tunnel Syndrome		KAR073307A		\$164,137
93.846	Development of Sodium Fluoride PET-MRI for Quantitative Assessment of Knee Osteoarthritis		KAR074492A	\$76,081	\$683,938
93.846	Enhanced Bone Healing Around Implants by Transplanted NF-kB Driven Immunomodulating MSCs		KAR063717C		\$368,500
93.846	Epigenetic determinants influencing development and evolution of chronic post-surgical pain in children undergoing musculoskeletal surgery	Cincinnati Children's Hospital Medical Center	308702 (PO #3100672394)		\$44,417
93.846	Establishing a Single-Cell Proteomic Atlas for Normal and Osteoarthritic Articular Cartilage		KAR077530A		\$101,404
93.846	Evaluating the potential of human induced pluripotent stem cells (hiPSC) for cartilage repair.		KAR070864A		\$412,964
93.846	Get moving, GET living: Graded exposure treatment for adolescents with chronic musculoskeletal pain.		KAR072921A		\$126,447
93.846	HEAL Initiative: Back Pain Consortium (BACFAC) Research Program Technology Research Sites	University of California, San Francisco	118178c		\$180,314
93.846	Homeostatic Regulators Disrupted in Skin Carcinogenesis		KAR043799F		\$571,649
93.846	Hydrogels with Controlled Degradation and Stress Relaxation for Engineered Cartilage		KAR074070A		\$5,923
93.846	Instant Stem Cell Labeling with a new Microfluidic Device		KAR075863A		\$64,772
93.846	Interactions of PTH and Wnt Signaling in Bone Formation		KAR073773A	\$19,418	\$372,930
93.846	Marfan Aortic Embryologic Origin Influences miR-29b Regulators and Targets		KAR066629A		\$7,166
93.846	MECHANISMS OF CHROMATIN REMODELING DURING EPITHELIAL DEVELOPMENT		KAR074221A		\$66,333
93.846	Microengineered Osteons for Bone Tissue Engineering		KAR057837C		-\$5,178
93.846	Mitochondrial inner membrane architecture in skeletal muscle pathophysiology		KAR074875A		\$253,323
93.846	Monitoring of Stem Cell Engraftment in Arthritic Joints with MR Imaging		KAR054458E		\$670,178
93.846	Mucosal Breaks in the Initiation and Progression of Rheumatoid Arthritis		KAR078268A		\$4,279
93.846	Novel PET/MR Imaging Approach for Persistent Postsurgical Pain Following Joint Replacement		KAR077706A		\$366,709
93.846	Novel PET/MR Imaging Approach for Persistent Postsurgical Pain Following Joint Replacement		KAR077706B		\$208,123
93.846	Oligoclonal T Cell Expansion and Rheumatoid Arthritis		KAR042527G		\$38,460
93.846	Pain Rehabilitation Virtual Reality (PR-VR): Innovations to enhance mobility in the presence of pain		KAR079140A		\$56,238
93.846	Patient Oriented Research in Vulnerable Populations with Skin Disease		KAR075060A		\$282,176
93.846	Postgraduate Training Program in Epithelial Biology		TAR0074221		\$220,967
93.846	RabGEF1 in MyD88 signaling, skin immunity, and atopic dermatitis		KAR067145A		\$27,675
93.846	Rapid Low-Cost Quantitative 3D MRI and Gait Assessment of the Knee		KAR077604A		\$583,362
93.846	Regulating Gli Function in Hair Follicle Progenitors		KAR054780D		\$492,263
93.846	Regulators of Epidermal Gene Expression		KAR045192E		\$481,243
93.846	Regulatory Variants in HUMAN SKIN DISEASES		KAR076965A		\$452,665
93.846	Sliding hydrogels for accelerating cartilage regeneration		KAR074502A		\$440,529
93.846	Small non-coding RNA regulation of RAS GTPase function in epidermal homeostasis		KAR071481A		\$138,365
93.846	Stanford Technology Accelerating Medicines Partnership Center		UAR067676A		\$14,036

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.846	Stromal Regulation of Basal Cell Carcinoma Formation		RAR046786E		\$249,774
93.846	Systems Modeling Guided Bone regeneration	University of Texas Health Science Center at Houston	0013113A / SA0000046		\$301,854
93.846	Targeted therapeutic modulation of inflammatory cytokines through manipulation of noncoding RNA regulation of innate immunity in atopic dermatitis		RAR076815A		\$208,689
93.846	Targeting DNA Demethylation Regulators in Osteoarthritis		RAR070865A		\$271,013
93.846	Thumb CMC Biomechanics and Early OA Progression	Rhode Island Hospital	7017137231		\$164,012
93.846	Thumb CMC Biomechanics and Early OA Progression	Rhode Island Hospital	Subaward No. 7015401		-\$117
93.846	Thumb CMC Biomechanics and Early OA Progression	Rhode Island Hospital	Subaward No. 7017137231		-\$49
93.846	Tissue engineering approaches for improved treatment of early stage osteonecrosis of the hip		RAR072613A		\$344,327
93.846	Training Program in Adult and Pediatric Rheumatology		TAR050942C		\$128,772
93.846	Training Program in Adult and Pediatric Rheumatology		TAR050942D		\$21,478
93.846	Transcriptional Regulatory Complexes in Epidermal Differentiation		KAR070895A		\$169,591
93.846	Vascularization in bone tissue engineering constructs		RAR074458A		\$250,229
93.846	Weight-bearing C-arm CT of the Knee		RAR065248A		\$5,394
93.847	123430 _LTOG AKI _Dhillon _Clinical and molecular epidemiology of acute kidney injury after lung transplant.	University Of Pennsylvania	3918396/PO4516982		\$54,314
93.847	157068 _Calcineurin in pancreatitis		RDK093491C		\$432,578
93.847	224800 WellRx subcontract: Does Free Medicine coverage Improve Diabetes	Kaiser Foundation Research Institute	RNG210891-Stanford		\$14,866
93.847	A Clinical Center to Study Immunological and Hormonal Biomarkers for the Diagnosis, Prediction, and Treatment of Chronic Pancreatitis and its Associated Development to Diabetes and Pancreatic Cancer		UDK108300A		-\$2,026
93.847	A Clinical Center to Study Immunological and Hormonal Biomarkers for the Diagnosis, Prediction, and Treatment of Chronic Pancreatitis and its Associated Development to Diabetes and Pancreatic Cancer		UDK108300B		\$677,884
93.847	A novel approach for treating diabetes using pulsed focused ultrasound and intraarterial delivery of mesenchymal stem cell based therapies directly into the pancreas		RDK119293A	\$10,301	\$714,310
93.847	A Randomized Trial of a Group-Based Yoga Intervention for Urinary Incontinence in Ambulatory Older Women	University of California, San Francisco	111178c		\$147,279
93.847	Accelerating Solutions to Optimize Glycemic Control and Weight Management in Young Adults with Type 1 Diabetes	University of North Carolina at Chapel Hill	5107491		\$54,275
93.847	Adult and Pediatric Nephrology and Urology Research Training Program		TDK007357H		\$404,566
93.847	Adult and Pediatric Nephrology and Urology Training Program		TDK007357G		\$2,512
93.847	An open-label, multi-centre, randomised, single-period, parallel study to assess the efficacy, safety and utility of 12 month day-and-night automated closed-loop insulin delivery under free living conditions compared to conventional insulin	Jaeb Center for Health Research	DAN05-Hood		\$61,633
93.847	Assessment of eligibility for kidney donation among potential living donors	University of California, San Francisco	11918sc		\$2,777
93.847	Beyond GWAS of insulin resistance: An integrated approach to translate genetic association to function		RDK106236A	\$172,108	\$558,161
93.847	Biologic Inhibitor of Galectin-3 for Liver Fibrosis	MandalMed, Inc.	Prime AW #1R43DK107285-01A1		\$18,589
93.847	BMP5 cells and signaling in BPH pathogenesis		RDK123232A		\$185,309
93.847	Bridging the gap between Type 2 Diabetes GWAS and therapeutic targets (WIP)	University of North Carolina at Chapel Hill	5119068		\$346,557
93.847	Bridging the gap between Type 2 Diabetes GWAS and therapeutic targets (WIP)	University of North Carolina at Chapel Hill	5121606		\$61,370
93.847	Cellular and molecular analyses of hematopoietic stem cell [HSC] interactions with bone marrow niches to improve HSC engraftment for transplantation and tolerance induction		RDK115600A		\$291,411
93.847	CFTR-Independent Bicarbonate Secretion is a Novel CF Therapeutic Target		KDK124684A		\$161,763
93.847	Characterization of novel insulin resistance genes by gene editing, high-throughput phenotyping and in vivo studies		RDK120565A		\$714,082
93.847	Chemical Control Of Energy Metabolism By N-Acyl Amino Acids		RDK124265A		\$577,429
93.847	Chemosensory tuft cells and intestinal homeostasis		KDK113041B		\$188,001
93.847	Chimeric Mice: Improving Drug Safety		RDK107393A		\$63,068
93.847	Chronic kidney disease of unknown etiology: investigating an endemic nephropathy with a multidisciplinary approach		RDK127138A		\$112,756
93.847	Circulating Factors That Regulate Brown And Beige Fat		RDK105203B		\$89,795
93.847	Clinical Trial of Latiglutenase for People with Celiac Disease and Type 1 Diabetes	ImmunogenX	138618		\$133,518
93.847	Co-Formulations of Amylin Analogues with Insulin Analogues for Treatment of Diabetes		RDK119254A		\$257,682
93.847	Consortium for the Study of Chronic Pancreatitis, Diabetes, and Pancreatic Cancer: Coordinating and Data Management Center	University of Texas MD Anderson Cancer Center	3001152175		\$18,881
93.847	Consortium for the Study of Chronic Pancreatitis, Diabetes, and Pancreatic Cancer: Coordinating and Data Management Center (DETECT)	University of Texas MD Anderson Cancer Center	3000971318		-\$740
93.847	Contribution of CMV-specific T cells to chronic kidney rejection		KDK123196A		\$138,554
93.847	Control of glucose homeostasis through the insulin-independent Isthmian pathway		RDK125260A		\$519,514
93.847	Controlling the rate of adipocyte differentiation: Experiments and theory		RDK101743A		-\$101
93.847	COVID-19 - Intestinal Organoid Modeling of SARS-CoV-2-Stimulated Innate and Adaptive Immunity		RDK130414A		\$32,075
93.847	COVID-19 - Structure-based Bioengineering of Wnt Surrogates for Intestinal Stem Cell Biology and Therapy		RDK115728A		\$554,606
93.847	Designer Tregs for restoring tolerance in patients with type 1 diabetes	University of California, San Francisco	103458c		\$145,072
93.847	Determining the mechanisms linking cell growth to the cell cycle in the liver		RDK128578A		\$110,627
93.847	Development of Beta-Cell-Targeted Regenerative Therapeutics Using A Novel Prodrug Strategy		RDK119955A		\$588,228
93.847	Development of concentrated, stable ultra fast-acting insulin formulation		RDK120430B	\$72,904	\$573,183
93.847	Development of long-acting glucose-responsive insulin formulations		RDK121336A	\$69,317	\$493,740
93.847	Diabetes, Endocrinology and Metabolism Training Grant		TDK007217J		\$340,779
93.847	Diabetic Foot Ulcer Biofilm Infection and Recurrence	Indiana University	8810_SU // PO0287871		\$117,523
93.847	Dietary and Microbial Reprogramming of Intestinal Microbiota-Produced Metabolites		RDK101674B	\$58,172	\$821,621
93.847	Discovering genetic and hormonal mechanisms underlying diabetes risk from flies to humans		RDK108817A		\$409,487
93.847	Efficacy of Twice Weekly Hemodialysis in Patients with Residual Kidney Function	Palo Alto Veterans Institute for Research	SIT003-01		\$47,528
93.847	Ethical provision of hemodialysis: Patients' perspectives on financial hardship and physician counseling in India		FDK118795A		\$2,760
93.847	Evaluating the Role of 24-hour Urine Testing in Urinary Stone Disease		FDK118801A		\$74,103
93.847	Family Matters: Optimizing Family-Based Interventions for Adolescents with Type 1 Diabetes		KDK121771A		\$130,455
93.847	Fatty Acid Signaling via GPCRs in Primary Cilia Controls Adipogenesis and Insulin Secretion, Regulating Obesity and Diabetes		RDK127665A		\$611,628
93.847	Foxo3 Driven Inflammation Causes Decline in Enteric Neural Stem Cells with Aging		KDK103966A		\$1,820
93.847	Gene Therapy for Diabetes	Oregon Health & Science University	1015967_STANFORD		\$197,410
93.847	Genetic and physiologic regulation of pig islet development and function		RDK128932A		\$86,466
93.847	Gut Bacteriophage Correspondence with Inflammation and Clinical Dietary Interventions		FDK126287A		\$22,590

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.847	Hepatitis B Research Network (HBRN): Natural History and Treatment Studies	University of California, San Francisco	11506sc		\$4,593
93.847	High School Program in Biomedical and Health Sciences		RDK078382D		\$184,931
93.847	High-throughput dissection of transcriptional regulation in kidney disease		FDK126120A		\$38,299
93.847	Human Islet Distribution Coordinating Center	City of Hope National Medical Center	PO #3000205838		\$308,503
93.847	Human Pancreas Analysis Program-T2D	Vanderbilt University Medical Center	VUMC81249		\$452,311
93.847	Identification and characterization of natural products from the human microbiota		RDK110174B		\$5,844
93.847	Impact of Diet on Intestinal Microbiota-Host Dynamics		RDK085025C		\$275,440
93.847	Impact of symbiotic protists on intestinal T cell homeostasis and inflammation.		RDK128292A		\$217,067
93.847	In vivo systems to discover mechanisms regulating human islet alpha cell function		RDK126482A	\$54,776	\$417,440
93.847	Integrating genome-scale data to reveal causal mechanisms in type 2 diabetes		UDK105535B		\$214,767
93.847	Intracellular Transport-The Mannose Phosphate Receptor		RDK037332H		\$4,341
93.847	Investigating the effects of aerobic and resistance training in vivo on skeletal muscle metabolism in vitro in primary human muscle cells (MoTrMyo)	Adventist Health System/Sunbelt, Inc. dba AdventHealth Orlando	1329760-Stanford		\$47,551
93.847	Investigation and Translation of the Intestinal Stem Cell Niche		UDK085527C		\$388,704
93.847	Large-scale functional validation of candidate transcripts emerging from GWAS and exome sequencing studies	Broad Institute, Inc.	5216280-5500001193		-\$1,140
93.847	Leveraging the Uniquely High Beta-Cell Zinc Content for Targeted Drug Delivery		RDK101530B		\$176,005
93.847	Longitudinal multi-omic profiles to reveal mechanisms of obesity-mediated insulin resistance		RDK110186A		\$479,201
93.847	Long-term metabolic effects of kidney events with intensive SBP control	University of Utah	Sub 10047597-01 PO #U00016223		\$38,915
93.847	Lymph Node Extracellular Matrix in Antigen Presentation and Immune Regulation		RDK096087D	\$92,519	\$544,055
93.847	Magnetic resonance Imaging as a Non-Invasive Method for Assessment of Pancreatic fibrosis (MINIMAP): a pilot study	Indiana University	IN-4687972-LSJU: PO 0056791		\$47,774
93.847	Mapping Protein Communication Between Organs in Homeostasis and Disease	Harvard University	153277-5107753-0004		\$89,847
93.847	Maximizing Geographic and Scientific Reach Through a Northern California Apollo Network: Application for Clinical Center	University of California, San Francisco	109428c		\$11,793
93.847	Mechanisms and Consequences of Defective Flow-induced Potassium Secretion in the Metabolic Syndrome		RDK115770A	\$53,142	\$469,814
93.847	Mechanisms of NAT2 regulation of insulin resistance and mitochondrial function		RDK116750A		\$550,138
93.847	Mentoring Patient-Oriented Clinical Investigators in Nephrology		KDK085446B		\$160,728
93.847	Metabolic Imaging of Nonalcoholic Fatty Liver Disease	University of Maryland	1700999/14333/SR00004443		-\$5,053
93.847	Modeling and modulating insulin delivery in automated insulin delivery systems to accommodate for meal compositions		KDK121942A		\$158,347
93.847	Modulation of gut bacteria-derived host metabolites		KDK110335A		\$205,025
93.847	Molecular Basis of Renal Epithelial Cell-Cell Adhesion		FDK124985A		\$38,450
93.847	Molecular Mechanisms of Insulin Resistance Associated Loci		RDK107437A		\$17,151
93.847	MRI-based Quantitative Susceptibility Mapping of Hepatic Iron Overload	University of Wisconsin-Madison	813K923		\$217,730
93.847	Multidimensional cellular interrogation of the kidney in AKI and CKD	University of California, San Francisco	11656sc		\$37,999
93.847	NADPH Oxidase Inhibition in NASH		RDK111217B		\$39,199
93.847	Nanoprobes for imaging RONS and drug-induced hepatotoxicity		RDK099800B		-\$363
93.847	New Onset Diabetes (NOD) Study / PROCEED	University of Texas MD Anderson Cancer Center	3000971318		-\$7,544
93.847	ONBOARD: OvercomiNG Barriers & Obstacles to Adopting Diabetes Devices		KDK119470A		\$115,878
93.847	One year day and night home closed-loop in young people with type 1 diabetes (DAN05) -An open-label,multi-centre,randomized,single-period,parallel study to assess the efficacy,safety and utility of 12 month day and night automated closed	Jaeb Center for Health Research	DAN05-Buckingham		\$12,778
93.847	Polarizing T Cell Responses in Vivo with Dendritic Cells		RDK057665F		-\$24,975
93.847	Post-Surgical Predictors of Depression and Weight Regain After Bariatric Surgery	Sanford Research North	SR-2019-209		\$216,903
93.847	Primary Outcomes in Glomerulonephritis Study (PROGRESS)	University Of Pennsylvania	4398408		-\$5,056
93.847	Primary Outcomes in Glomerulonephritis Study (PROGRESS)	University Of Pennsylvania	579594 PO 4506936		\$9,305
93.847	Primary Outcomes in Glomerulonephritis Study (PROGRESS)	University Of Pennsylvania	582484		\$393
93.847	Proteomic determinants of direct measures of insulin sensitivity		RDK114183A		\$381,536
93.847	Quantifying the Metrics of Surgical Mastery: An Exploration in Data Science		RDK123445A	\$50,321	\$495,407
93.847	Rationalising coronary artery disease screening prior to kidney transplantation		KDK123410A		\$202,439
93.847	Regulation of gastrointestinal hormone signaling and metabolism by Neuromedin U		RDK107507A		\$330,770
93.847	Response Training for Obesity Treatment: Translational Neuroscience		RDK112762B	\$92,331	\$199,172
93.847	Role and Regulation of colon Trafficking Novel G-Protein Coupled Receptors		RDK101119A		-\$16,116
93.847	Role of hemeoxygenase-1 in experimental acute pancreatitis		RDK092421B		\$208,179
93.847	Role of Immune Cells in Chronic Pancreatitis		RDK105363A		\$219,281
93.847	Role of Nucleus Accumbens and Its Glutamatergic Inputs in High-Fat intake		KDK115895A		-\$4,049
93.847	Role of Transglutaminase 2 in Celiac Sprue		RDK063158E	\$279,800	\$671,142
93.847	Sex Disparities in Access to Kidney Transplant		FDK118869B		\$26,406
93.847	Signaling Pathways in MDS		RDK107286B	-\$1,382	\$69,835
93.847	Stanford Advanced Wound Care Center Clinical Research Unit		UDK119094A		\$388,075
93.847	Stanford Diabetes Research Center		PDK116074A		\$1,387,388
93.847	Stratification of Non-alcoholic Fatty Liver Disease using the SAFE Score		RDK127224A		\$150,736
93.847	Strength Training Regimen for Normal weight Diabetics (STRONG-D)		RDK081371C		\$50,732
93.847	Structural and Functional Studies of the Sodium-Potassium-Chloride-Cotransporter		FDK114983A		\$14,772
93.847	Structure/Function Correlations Over Copper Enzymes		RDK031450J		\$8,706
93.847	Structure/Function Correlations Over Copper Enzymes		RDK031450K		\$427,126
93.847	Structure-based Bioengineering of Wnt Surrogates for Intestinal Stem Cell Biology and Therapy		RDK115728A		\$650,831
93.847	Teamwork, Targets, Technology, and Tight Control in Newly Diagnosed Pediatric T1D: 4T Study		RDK122422A		\$650,634
93.847	Testing combinations of population interventions to encourage healthy eating		RDK116852A		-\$317
93.847	The Atrial Fibrillation - Factor Identification to Risk Modification Study in HD103080	Baylor College of Medicine	7000001119		\$136,988
93.847	The Development of 4-methylumbelliferone Pro-drugs to Prevent Autoimmune Diabetes		RDK114174A		\$325,218
93.847	The impact of glomerular disorders on bone quality and strength	Columbia University	5(GG015009-01); G13413		\$7,813
93.847	The Insulin-Only Bionic Pancreas Bridging Study	Jaeb Center for Health Research	SPO #137484		-\$471
93.847	The Insulin-Only Bionic Pancreas Study	Jaeb Center for Health Research	IOBP Pivotal 172764; ID 1862		\$186,711
93.847	The International Diabetes Closed Loop (IDCL) trial: A Randomized Crossover Comparison of Adaptive Model Predictive Control (MPC) Artificial Pancreas Versus Sensor Augmented Pump (SAP)/Predictive Low Glucose Suspend (PLGS) in the Outpatient	Jaeb Center for Health Research	DCPL4-197520		\$63,270
93.847	The Optimal Pathway to Implanted Autonomous Insulin Delivery		KDK122017A		\$152,713

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.847	The Role of Hyaluronan and CD44 in the Pathogenesis of Type 2 Diabetes		RDK116782A		\$616,989
93.847	The Role of Adenosine Kinase in Controlling Beta-Cell Regeneration		RDK101530A		-\$31,079
93.847	The role of circulating Slit2 in adipose thermogenesis and diabetes		RDK111916B		\$164,673
93.847	The role of FL2 in Cavernous Nerve Repair in an Animal Model of Radical Prostatectomy	Albert Einstein College of Medicine	310235 - P0820191		\$56,733
93.847	The role of small RNA derived tRNAs in gene regulation: Mechanism and Therapeutic Applications		RDK114483A		\$290,211
93.847	The Stanford Clinical Center for the Study of Type 1 Diabetes in Acute Pancreatitis		UDK127395A		\$213,705
93.847	The Stanford Pre-Renal Initiative: Undergraduate Training in Kidney Health		RDK122957A		\$82,671
93.847	Therapeutic Exploitation of IPSE, a Urogenital Parasite-Derived Host Modulatory Protein, for Bladder Hypersensitivity Syndromes	Children's National Medical Center (Children's Research Institute)	30005392-01		\$97,406
93.847	Therapeutic targeting of human islets with recombinant regulatory T cells		UDK123743A	\$22,674	\$954,549
93.847	Three-Dimensional Structure of Eukaryote Chromosomes		RDK121366A		\$1,841,761
93.847	Toward optimizing diabetes care in persons with chronic kidney disease		KDK110221A		\$125,216
93.847	Training Grant in Academic Gastroenterology		TDK007056J		\$328,809
93.847	Training in Pediatric Nonmalignant Hematology and Stem Cell Biology		TDK098132B		\$173,399
93.847	Training Research Leaders in Type 1 Diabetes		KDK122550A		\$489,762
93.847	Translation of the UVA Advanced Automated Insulin Delivery Systems to Clinical Care in Young Children: Glycemic Control, Regulatory Acceptance, and Optimization of Day to Day Use	University of Virginia	GB10908.PO#2318792		\$187,914
93.847	TrialNet at Stanford 2019	University of South Florida	6163-1082-10-BN		\$234,284
93.847	Understanding mechanisms by which microbial strains and metabolites present in fermented foods decrease systemic inflammation		FDK128865A		\$29,394
93.847	Understanding the developmental xenobARRIER		RDK121851A		\$486,784
93.847	United States Renal Data System (USRDS)	Hennepin Healthcare Research Institute	75N94019C00006_Option Period 2		\$6,698
93.847	United States Renal Data System (USRDS)	Hennepin Healthcare Research Institute	Option Period 1_75N94019C00006		\$10,902
93.847	Valine as a metabolic modulator of hematopoiesis		RDK116944A		\$238,428
93.847	Whole blood gene expression to identify biomarkers of disease risk, progression and response to therapy in Type 1 diabetes		RDK115874A		\$343,607
93.847	Wise Social Psychological Interventions to Improve Outcomes of Behavioral Weight Control in Children with Obesity		RDK123286A		\$685,495
93.847	Wnt4(+) Cell Fate Mapping and ENaC Activity in Furosemide-treated Mice	University of Pittsburgh	CNVA00060589 (131753-2)		\$43,221
93.853	"NIH StrokeNet National Coordinating Center" - Administrative Consulting Agreement - Albers	University of Cincinnati	011414-Adm-Albers		\$8,060
93.853	24/7 Closed Loop Insulin Delivery in Older Subjects with Type 1 Diabetes	University of Cambridge	RG84379; DAN06		\$43,555
93.853	A Brain Circuit Program for Understanding the Sensorimotor Basis of Behavior	University Of Washington	UWSC10311; BPO40343		\$18,590
93.853	A molecular investigation of retinoic acid-dependent homeostatic synaptic plasticity		RNS115660A		\$623,272
93.853	A Multicenter Study of EEG in Premature Infants with Neonatal Encephalopathy		KNS102598A		\$6,035
93.853	A novel blood-CSF adaptive immune response in Alzheimer's disease		KNS112458A		\$120,281
93.853	A youth-specific helmet for preventing traumatic brain injury	Savior Brain Inc.	RNS119134A		\$32,736
93.853	ARCADIA CSI (Cognition and Silent Infarcts)		UNS110728A	\$699,953	\$1,002,811
93.853	a-Synuclein and LRRK2 in the Pathogenesis of Parkinson's disease	Harvard University	113140-4		-\$63
93.853	ATP-Dependent Chromatin Regulation in Neurodevelopment and Human Disease		RNS046789E		\$26,495
93.853	Automated Phenotyping in Epilepsy		RNS114020A	\$214,370	\$588,017
93.853	Axonal myelination of interneurons in cortex: functional significance and plasticity.		RNS094499A		\$224,648
93.853	B Lymphocyte-Mediated Autoimmunity in Pain after Trauma	Palo Alto Veterans Institute for Research	CLA0042-01		\$184,462
93.853	Bilateral Closed Loop Deep Brain Stimulation for Freezing of Gait using Neural and Kinematic Feedback		UNS107709A		\$1,032,591
93.853	Binding of Epstein Barr Virus EBNA2 unifies multiple sclerosis genetic mechanism	Cincinnati Children's Hospital Medical Center	138881 / PO #3100620274		\$9,142
93.853	Biofluorescent indicators for noninvasive imaging of acetylcholine release		RNS122055A		\$84,742
93.853	Biophysical Characterization of Subthalamic Local Field Potentials in Parkinson's Disease	Case Western Reserve University	RES516004		\$46,294
93.853	Brainwide Computations Underlying Future Action Plans		KNS116122A		\$101,331
93.853	Bringing laser focus to voltage imaging: Enhanced indicators and advanced scanning methods for two-photon recording of dense networks in vivo		UNS103464A	\$52,056	\$89,911
93.853	Cannabinoid control of epilepsy		RNS099457A	\$93,201	\$236,289
93.853	Causal mapping of emotion networks with concurrent electrical stimulation and fMRI	California Institute of Technology	S410591		\$94,549
93.853	CDKN2A couples lipid metabolism to Ferroptosis in Glioblastoma	University of California, Los Angeles	1490 G YC517		\$772
93.853	Cell-cell communications in neural circuit assembly		RNS050835C		\$163,660
93.853	Central Thalamic Stimulation for Traumatic Brain Injury	Weill Cornell Medical College	194150-03		-\$20,610
93.853	Central Thalamic Stimulation for Traumatic Brain Injury	Weill Cornell Medical College	204548-03		\$472,050
93.853	Characterization of central pain mechanisms using simultaneous spinal cord-brain functional imaging		RNS109450A		\$559,245
93.853	Characterization of Sexual Dimorphism in the brain		RNS049488C		\$726,150
93.853	Child Neurologist Career Development Program (Cncdp)	Kennedy Krieger Institute	113126-0721-20B		\$13,761
93.853	Circuit mechanisms for encoding naturalistic motion in the mammalian retina	University of Chicago	FP069821-01		\$53,988
93.853	Clinical Research in ALS and Related Disorders for Therapeutic Development (CRaTe) CAPTURE	University of Miami	OS00000514 // PO SPC-001780		\$10,325
93.853	Clinical Research in ALS and Related Disorders for Therapeutic Development (CRaTe) CAPTURE	University of Miami	SPC-001420		\$21,053
93.853	Clinical translation of targeted and noninvasive ultrasonic propofol uncaging		UNS114438A		\$250,459
93.853	Clinical Translation of Ultrasonic Ketamine Uncaging for Non-Opioid Therapy of Chronic Pain		UNS115637A		\$808,207
93.853	Clinical Trial Readiness for SCA1 and SCA3-YR3	Houston Methodist Research Institute	AGMT00004435		\$966
93.853	Closed-loop intervention in epilepsy.		RNS094668A	\$1,114	\$6,307
93.853	Close-loop, spatially addressable multiphoton functional imaging	Cornell University	88390-11314		\$235,931
93.853	Combinatorial matrix-mimetic recombinant proteins as engineered nerve guidance conduits		RNS114549A		\$257,651
93.853	Computational modeling of dynamic causal brain circuits underlying cognitive dysfunction in Alzheimer's disease		RNS086085B		\$2,533
93.853	Contribution of Gigantocellular neurons of the medullar reticular formation to awakening from a low brain activity state	Weill Medical College of Cornell University - New York	190413		-\$233
93.853	Control of Axon Initial Segment in Epilepsy		RNS121106A		\$82,447
93.853	Correction of Mucopolysaccharidosis type 1: Targeting safe harbor loci using genome editing		KNS102398A		\$230,691
93.853	CT Perfusion to Predict Response to Recanalization in Ischemic Stroke Project 2 (CRISP 2)		RNS075209B		\$573,445
93.853	Deciphering the role of Ataxin-2 in amyotrophic lateral sclerosis		FNS116208A		\$80,787

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.853	Developing Neuropathological Criteria for CTE	University Of Pennsylvania	568538; PO# 4508595		\$223
93.853	Development of A Novel Imaging Strategy for Evaluation of CAR T-Cell Therapy in Glioblastoma		RNS121674A		\$32,239
93.853	Developmental Synaptopathies Associated with TSC, PTEN and SHANK3 Mutations	Boston Children's Hospital	81199.Stanford.02.PMS		\$4,200
93.853	Developmental Synaptopathies Associated with TSC, PTEN and SHANK3 Mutations	Boston Children's Hospital	GENFD0001945421		\$18,272
93.853	Developmental Synaptopathies Associated with TSC, PTEN and SHANK3 Mutations	Boston Children's Hospital	GENFD0001945451		\$23,670
93.853	Developmental Synaptopathies Associated with TSC, PTEN and SHANK3 Mutations	Boston Children's Hospital	GENFD0001945421/ 81199.02.TSC		-\$500
93.853	Developmental Synaptopathies Associated with TSC, PTEN, and SHANK3 Mutations (CT Pilot)	Boston Children's Hospital	GENFD0001761812		\$1,340
93.853	Developmental Synaptopathies Associated with TSC, PTEN, and SHANK3 Mutations (CT Pilot)	Boston Children's Hospital	GENFD0002004779		\$8,135
93.853	Discovery of Small Molecules that Block Supt4h1-Supt5h Dimerization for Potential C9FTD/ALS Therapeutics	Southern Illinois University at Carbondale	SIUC 20-04		\$32,272
93.853	Dissecting the Cognitive Roles of Hippocampus and Other Temporal Lobe Structures in Patients Undergoing Epilepsy Surgery	Emory University	A389318		\$3,919
93.853	Disseminating an Instrumented Mouthguard for Large-Scale Human Study of Mild Traumatic Brain Injury		RNS098518A		\$155,199
93.853	Dopamine degradation pathway and alpha-synuclein aggregation		RNS103037A	\$19,572	\$436,986
93.853	Dopamine Modulation of Synaptic Plasticity and Integration in the Striatum		RNS091144A		\$71,571
93.853	Dynamic regulation of whole brain circuit function by basal ganglia pathways		RNS091461A		\$117,637
93.853	Effects of Extracellular Mechanics on Mechanosensory and Central Neuron Function		FNS115219A		\$43,511
93.853	Effects of TrkB Activation on Abnormalities in Neocortical FS interneuron		RNS082644C		\$549,623
93.853	Ensemble neural dynamics in the medial prefrontal cortex underlying cognitive flexibility and reinforcement learning		RNS104833A		-\$2,759
93.853	Epilepsy Training Grant		TNS007280G		\$205,507
93.853	Experimental Study of Goal-Directed Behavior and Memory During Temporal Lobe Epileptic Activity		RNS113024A		\$140,060
93.853	Exploring Novel Epilepsy Pathways	University of Iowa	1001876082; g/p# 11277800		\$13,450
93.853	Focal Sustained Release Chemotherapy-Loaded Biomaterials at Tumor Sites	Tufts University	HH4218; PO# EP0173100		\$203,696
93.853	From structure to therapy: the TRiC Chaperonin network in Huntington's disease	University of California, Irvine	2017-3505		\$31,494
93.853	From structure to therapy: the TRiC Chaperonin network in Huntington's disease	University of California, Irvine	2017-3505 / P01 NS092525		\$60,070
93.853	From structure to therapy: the TRiC Chaperonin network in Huntington's disease	University of California, Irvine	Subaward 2016-3341		\$84,374
93.853	G Protein Coupled Receptor Structure, Dynamics and Signaling		RNS028471H		\$407,310
93.853	Genetic and cellular analysis of glial development and function in vertebrates		RNS111584A		\$569,842
93.853	Genetic Control of Neural Stem Cell Homeostasis		RNS083417C		\$303,076
93.853	Global Leukodystrophy Initiative Clinical Trials Network (GLIA-CTN)	Children's Hospital of Philadelphia	3202030620/PO#20211051		\$91,951
93.853	HEAL Study (High-dose Erythropoietin for Asphyxia and Encephalopathy)	University of California, San Francisco	9681sc		\$86,817
93.853	HEAL-EEG - Neurophysiologic measures of Epo treatment for hypoxic-ischemic encephalopathy (HIE)	University of California, San Francisco	11027sc		\$4,546
93.853	HEAL-EEG-Neurophysiologic measures of Epo treatment for hypoxic-ischemic encephalopathy (HIE)	University of California, San Francisco	11099sc		\$81,452
93.853	High-Bandwidth Wireless Interface for Continuous Human Intracortical Recording	Massachusetts General Hospital	227057		\$37,942
93.853	How does 3 UTR secondary structure program mRNA transport in myelination?		RNS123533A		\$28,985
93.853	How Does Actin Disassembly Drive Myelin Wrapping?		RNS119823A		\$425,975
93.853	Human Infrared Vision at Molecular and Cellular Scale		DNS105737A		\$906,355
93.853	Ictogenesis in a model of temporal lobe epilepsy		RNS040276D		\$75,452
93.853	Identification and Molecular Characterization of Somatic Mutations in MCD	University of North Carolina at Chapel Hill	5116796		\$26,804
93.853	Imaging B cells in the brain and beyond: developing an immuno-PET toolbox to improve understanding and treatment of multiple sclerosis		RNS114220A		\$573,320
93.853	Imaging inflammation in the whole body and brain of ME/CFS patients		RNS120087A		\$102,214
93.853	Impact of Recurrent Seizures upon Myelin Structure and Function	Kennedy Krieger Institute	5Ki2NS098482-04		\$120,377
93.853	Impact of sleep-wake circuits on cortical synapse plasticity during motor learning		RNS104950A	\$169,964	\$504,201
93.853	Inhibitory Controls in the Thalamic Neurons		RNS034774F		\$422,600
93.853	Innovating Yeast and Human Genetics Approaches to Define Mechanisms of Neurodegenerative Disease		RNS097263A		\$1,200,418
93.853	Instructive Signals for Motor Learning		RNS072406B		\$31,291
93.853	Integrating Pragmatic Comparative Effectiveness Research into a Tertiary Pain Management Center		KNS120039A		\$46,411
93.853	Integration of Diffusion MRI Fiber Tracking and CLARITY 3D Histology for Improved Neurosurgical Targeting		RNS095985A		-\$80
93.853	Interneuron-Based Mechanisms of Temporal Lobe Epilepsy		RNS107290A		\$661,732
93.853	Investigating the neural mechanism of essential tremor using a novel mouse model		KNS105155A		\$24,874
93.853	KIR and HLA effects in CNS paraneoplastic syndromes and related neuroimmune conditions		UNS120885A		\$34,092
93.853	Label-free Optical Recording of Neuroelectric Activities		RNS121934A		\$123,194
93.853	Large-scale dual-color two-photon calcium imaging in awake behaving animals		RNS098519A		-\$3,772
93.853	Large-scale recordings in Primate Prefrontal Cortex: Mechanisms of Value and Attention		RNS116623A	\$179,507	\$345,506
93.853	Massively parallel microwire arrays for deep brain stimulation		RNS104861A		\$380
93.853	Maternal Outcomes and Neurodevelopmental Effects of Antiepileptic Drugs (MONEAD)		RNS038455I	\$2,149,407	\$2,763,689
93.853	Mechanisms and Therapeutic Options of Hypersomnia in Myotonic Dystrophy		RNS109775A		\$250,735
93.853	Mechanisms of Dendritic Tiling		FNS120933A		\$24,791
93.853	Mechanisms of Synaptic Specificity in C. elegans		RNS048392D		-\$209,122
93.853	Mechanisms underlying radiation and chemotherapy induced cognitive impairment	University of California, Irvine	2016-3313		\$50,952
93.853	Methods for Dynamic Causal Interactions in Human Brain Function and Dysfunction		RNS086085A		\$48,924
93.853	MicroRNA-Dependent Regulation of Synaptic and Behavioral Plasticity in Drosophila	Harvard University	152738.5095129-0505		\$126,571
93.853	Modulating Subthalamic Dysfunction to Ameliorate Disordered Sleep in Parkinson's Disease	University of Nebraska	34-5385-2100-001		\$330,560
93.853	Modulating the post-stroke inflammatory response to improve outcome in models of cerebral ischemia		RNS100180B		\$469,964
93.853	Molecular Genetic Analysis of TORC1 and TORC2 Signaling in Neuronal Maintenance		RNS084412B		\$381,182
93.853	Molecular Mechanisms Regulating Inhibitory Circuitry in the Spinal Cord		RNS083998D		\$439,134
93.853	Multi-Arm Optimization of Stroke Thrombolysis (MOST) Stroke Trial	University of Cincinnati	011266-022		\$82,790
93.853	Multimodal approach investigating the immunomodulatory effect of neural stem cells in stroke recovery		RNS058784D		\$527,872
93.853	Multi-regional neural circuit dynamics underlying short-term memory	Baylor College of Medicine	7000000465		\$839

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.853	Multi-regional neural circuit dynamics underlying short-term memory	Baylor College of Medicine	7000001047		\$139,585
93.853	Mutations in ACTL6B cause recessive autism: affected families, mouse model, molecular and circuit mechanisms		FNS118735A		\$37,797
93.853	Network mechanisms of delayed, immune-dependent hippocampal dysfunction after juvenile stroke	Kennedy Krieger Institute	5K12NS098482-05		\$125,370
93.853	Neural Basis of Behavioral Sequence Loops	Harvard University	149420.5104941.0403		\$166,607
93.853	Neural Basis of sensory-Guided Motion	California Institute of Technology	S399719	\$91,149	\$243,768
93.853	Neural circuit mechanisms controlling seizures		KNS121399A		\$47,113
93.853	Neural computations underlying vocal sensorimotor transformations	New York University	19-A0-00-1002501		\$22,962
93.853	Neural computations underlying vocal sensorimotor transformations	New York University	19-A0-00-1002501;PO#M200283440		\$45,561
93.853	Neural representation of mating partners by male C. elegans.	California Institute of Technology	S447445		\$8,042
93.853	Neural representation of mating partners by male C. elegans.	California Institute of Technology	S447445 / R01 NS113119		\$127,637
93.853	Neuroimaging-Based Brain and Spinal Cord Biomarkers for Cervical Radiculopathy		KNS104211A		\$146,824
93.853	Neuromodulation of Brain States		RNS104698A		\$375,032
93.853	Neuronal activity-regulated mechanisms of glioma growth		RNS092597A		\$404,262
93.853	Neuronal and behavioral responses to spinal cord injury		RNS091031B		\$590,075
93.853	Neurostimulation and Recording of Real World Spatial Navigation in Human	University of California, Los Angeles	2000 G YG486		\$37,113
93.853	Neurostimulation by Ultrasound: Physical, Biophysical, and Neural Mechanisms		RNS112152A		\$927,129
93.853	Non-coding RNA regulation of sex differences in stroke		RNS107445A		\$511,224
93.853	Noninvasive optogenetics for seizure inhibition		KNS119784A		\$33,934
93.853	Novel fluorescent sensors for imaging neuromodulation	University of California, Berkeley	00010178; BB01416451		\$376,824
93.853	NSTN National Clinical Coordinating Center	University of Cincinnati	011414-Adm-Wintermark		\$11,677
93.853	Optimizing Stem Cell-Enhanced Stroke Recovery through a Bioengineered Electrically Conductive Polymer Scaffold		KNS089976A		-\$77
93.853	Optogenetic approaches to study post-stroke recovery mechanisms		RNS093057A		\$152,687
93.853	Optogenetic approaches to study post-stroke recovery mechanisms		RNS093057B		\$192,650
93.853	Pacific Northwest Udall Center		PNS062684D	\$109,456	\$176,849
93.853	Patterning dendritic branches with environmental and neuronal surface molecules		RNS082208C		-\$35,492
93.853	Peizoi in neural stem cell mechanoregulation	University of California, Irvine	2018-3650		\$6,981
93.853	Perinatal Arterial Stroke: A Multi-site RCT of Intensive Infant Rehabilitation (I-ACQUIRE)	Virginia Tech	432107-19751		\$81,609
93.853	Peripheral and central immune contributions to pain chronification		KNS094547A		\$11,261
93.853	Perisomatic inhibition in epilepsy		KNS117795A		\$84,647
93.853	Population Neural Activity Mediating Sensory Perception Across Modalities		RNS110060A	\$705,329	\$1,220,617
93.853	PRECISE (PeR fusion imaging to identify post Erior Circulation candidates for thrombectomy)		RNS121720A		\$106,034
93.853	PRECision Care In Cardiac ArrEst - ICECAP (PRECICECAP)		RNS119825A	\$57,397	\$574,634
93.853	Preventing Epilepsy Using Vigabatrin in Infants with Tuberous Sclerosis Complex	University of Alabama	000510297-SC002		\$522
93.853	Preventing Epilepsy Using Vigabatrin in Infants with Tuberous Sclerosis Complex	University Of Alabama In Birmingham	000510297-002		\$69,742
93.853	Prognostic biomarkers for high-impact chronic pain: Development and validation		RNS118651A		\$98,004
93.853	Protective mechanisms of ischemic postconditioning		RNS064136C		\$304,510
93.853	Protein Aggregation and Inclusion Body Formation		RNS042842F		\$289,929
93.853	Prototyping an ultrasound system for localized delivery of neuromodulatory agents and functional imaging in awake primates	Vanderbilt University Medical Center	VUMC69042		\$127,111
93.853	Quynh Anh Nguyen Dissecting the function of the 3 subunit of the GABAA receptor ex vivo and in vivo		FNS106764A		\$35,766
93.853	Recombinant Immunolabels for Nanoprecise Brain Mapping Across Scales	University of California, Davis	A19-1044-S003-A02		\$32,996
93.853	Regulation of Blood-Brain Barrier Function by the RECK/GPR124/Wnt7 Pathway		RNS100904A		\$422,744
93.853	Regulation of mitochondrial motility and mitophagy by LRRK2		RNS089583A		\$3,868
93.853	Responsive Neurostimulation for Loss of Control Eating		UNS103446A	\$333,549	\$954,430
93.853	Revealing protein synthesis defects in Fragile X Syndrome with new chemical tools		8-RNS076860A		-\$537
93.853	Shared Mechanisms of Absence Epilepsy and Selective Attention		FNS112764A		\$47,435
93.853	Small-molecule probes for study of CLC-2 chloride-channel function in the central nervous system		RNS113611A		\$465,596
93.853	Spatial and temporal regulation of synapse formation through phase separation		KNS123233A		\$12,666
93.853	Spatial Profiling of Inter-Cellular Regulation of Skeletal Muscle Regeneration		KNS120278A		\$92,070
93.853	Speaking of Spikes: Connectivity and Language in Benign Epilepsy with Centrotemporal Spikes		KNS116110A		\$162,695
93.853	SPO#128582 Towards a Complete Description of the Circuitry Underlying Sharp Wave-Mediated Memory Replay		UNS104590A	\$1,277,563	\$2,760,013
93.853	SPRINT: Signature for Pain Recovery IN Teens		RNS114926A	\$538,934	\$1,221,116
93.853	Stanford Neuroscience Research Cores for Gene Vectors, Microscopy, and Behavior		PNS069375B		\$47,258
93.853	Stanford Neurosurgery and Neurology Resident Research Education Program		RNS065741C		\$241,797
93.853	Stanford Neurosurgery Resident Research Education Program		RNS065741B		\$578
93.853	Stanford University Regional Coordinating Stroke Center for the NINDS Stroke Trials Network		UNS107220A		\$359,523
93.853	Stroke Trials Network National Data Management Center (NDMC)	Medical University of South Carolina	A00-1427-S001		\$20,393
93.853	Structural Basis of Signal Instigation Through Family C GPCRs		RNS122394A		\$128,320
93.853	Structural Basis of Signal Instigation Through Metabotropic Glutamate Receptors		RNS092695B		-\$27,204
93.853	Structural Basis of Signal Instigation Through Metabotropic Glutamate Receptors		RNS092695B	\$2,904	\$2,904
93.853	Structure and function of spontaneous network activity during circuit formation		KNS119295A		\$22,159
93.853	The biophysics of skin-neuron sensory tactile organs and their sensitivity to mechanical and chemical stress		RNS105092A		\$696,814
93.853	The effect of vitamin D3 supplementation on markers of oxidative stress in boys with X-linked adrenoleukodystrophy		KNS087151A		-\$17,305
93.853	The impact of early Tau pathology on cognitive progression and neuropsychiatric symptoms in Parkinson's disease		RNS115114A		\$582,830
93.853	The Role of Purinergic Signaling in Microglia Birth and Maturation in the Adult Brain		KNS108486B		\$55,169
93.853	The Vascular Effects of Infection in Pediatric Stroke (VIPS II) Study	University of California, San Francisco	10590SC		\$48,300
93.853	The Vascular Effects of Infection in Pediatric Stroke (VIPS II) Study	University of California, San Francisco	11261sc		\$8,222
93.853	Towards a unified framework for dopamine signaling in the striatum	Harvard University	153407.5111713.0110		-\$2,843
93.853	Towards a unified framework for dopamine signaling in the striatum	Harvard University	153407.5111713.0210		\$218,593
93.853	Tracking pre-seizure dynamics to predict and control seizures		RNS117150A		\$132,967
93.853	Tracking the invaders in multiple sclerosis: Highly specific TREM1-targeted PET imaging of toxic infiltrating myeloid cells and early treatment response.		RNS109783A		\$29,971
93.853	Transgenic mice and multiplexed, multi-beam instrumentation for large-scale optical experiments on brain states and ensemble cellular dynamics in behaving animal		UNS107610A	\$160,897	\$407,319
93.853	Tumor DNA in CSF and novel modeling decode breast cancer - brain metastases		KNS091527A		\$121,580

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.853	Whole Transcriptome Studies of Patients with Transient Ischemic Attacks	University of California, Davis	201600371-01 (A16-0068-S001)		\$37,439
93.855	A "Culture" Shift: Integrated Bacterial Screening and Antibacterial Susceptibility Test on Microfluidic Digital Array for Bloodstream Infections	Johns Hopkins University	2003726059		\$290,498
93.855	A genomic tool for identifying pathogenic circulating vaccine-derived polioviruses		RAI148810A		\$153,705
93.855	A vaccine design to induce protective B and T cell immunity against hepatitis C virus		UAI159840A		\$141,870
93.855	AAV capsid engineering for enhancing gene transfer		RAI116698B		\$668,392
93.855	Accelerated dissociation of IgE receptor complexes		RAI115469A		\$257,837
93.855	Acute/chronic limitations to transcriptional RNAi therapies for infectious and other liver diseases		RAI071068C		\$401,372
93.855	Acute/chronic limitations to transcriptional RNAi therapies for infectious and other liver diseases		RAI071068D		\$13,585
93.855	Adaptive and Innate Immunity, Memory and Repertoire in Vaccination and Infection		UAI057229C		-\$251
93.855	Advancing a Broad-Spectrum Anti-Influenza A Virus RNA Packaging Inhibitor to an IND		RAI132191A		\$525,060
93.855	Advancing Broad Spectrum Host-Targeting Antiviral Strategies to the Clinic		UAI109662A		-\$7,960
93.855	An injectable hydrogel platform for sustained release of eCD4-Ig	Scripps Research Institute	5-27343		\$54,736
93.855	An Integrated Micro-Basophil Activation Test for Rapid Food Allergy Diagnostics		RAI149277A		\$221,002
93.855	Antibiotics from nose and throat commensals that impact pathogen colonization	Baylor College of Medicine	7000001139		\$272,034
93.855	Antimicrobial resistance and horizontal gene transfer in the human gut microbiome in response to an antibiotic	Palo Alto Veterans Institute for Research	REL0028-01		-\$5,516
93.855	Antimicrobial resistance and horizontal gene transfer in the human gut microbiome in response to an antibiotic	Palo Alto Veterans Institute for Research	REL0028-02		-\$19,166
93.855	Antimicrobial resistance and horizontal gene transfer in the human gut microbiome in response to an antibiotic	Palo Alto Veterans Institute for Research	REL0028-03		\$214,702
93.855	Antimicrobial resistance and horizontal gene transfer in the human gut microbiome in response to an antibiotic	Palo Alto Veterans Institute for Research	REL0028-04		\$16,457
93.855	Applied Genomics in Infectious Diseases		TAI007502E		\$246,724
93.855	B and T Cell Biology of Protection from and Eradication of SIV/SHIV Infection	Emory University	A365272		\$530,558
93.855	B-Cell Targeted Induction to Improve Outcomes in Pediatric Lung Transplantation	Washington University in St. Louis	WU-18-111; PO# 2934663E		\$1,234
93.855	Beta-lactamase probes for bacterial detection		RAI125286A		\$289,020
93.855	Big Data Analysis of HIV Risk and Epidemiology in Sub-Saharan Africa		RAI127250A	\$168,945	\$620,372
93.855	Biomarkers for Post-Transplant Lymphoproliferative Disorders in Children		8-UAI104342A		-\$129
93.855	Center for Research to Evaluate and Advance TEs for TB (CREATE)	University of California, San Francisco	123625c		\$96,941
93.855	Center for Solutions for ME/CFS	Columbia University	2(GG014214-04)		-\$301
93.855	Center for Solutions for ME/CFS	Columbia University	2(GG014214-06)		\$6,222
93.855	Changes in Bone Quality, Sarcopenia and Fat Distribution in HIV/HCV Patients After HCV Therapy	University Of Pennsylvania	# 573221; PO 4599907		\$16,729
93.855	Changing Cultures in Sepsis: Rapid single cell pathogen identification and antibiotic susceptibility testing directly from whole blood		RAI153133A	\$91,137	\$376,101
93.855	Characterization of degranulation regulators in human mast cells		RAI163438A		\$21,874
93.855	Characterization of encystation pathways in Entamoeba histolytica		RAI150957A	\$43,851	\$285,021
93.855	Characterization of the human antibody response to a novel neutralizing HIV-1 epitope		FAI152943A		\$8,577
93.855	Characterizing infectiousness of subclinical TB and identifying novel early diagnostic strategies for preventing transmission		RAI149620A		\$79,726
93.855	Chemical Mycobacteriology		RAI051622E	\$1,400	\$431,215
93.855	Clinical Epidemiology of Infectious Diseases		TAI052073C		\$232,308
93.855	Comparative MHC and KIR immunogenetics in the great apes		RAI024258G		\$345,453
93.855	Computational models of naturally acquired immunity to falciparum malaria	University of California, San Francisco	120408c		\$342,134
93.855	Computational models of naturally acquired immunity to falciparum malaria	University of California, San Francisco	120408c / U01 A1150741		\$230,250
93.855	COVID-19 - Computational models of naturally acquired immunity to falciparum malaria	University of California, San Francisco	123008c		\$475,212
93.855	Congenital and Perinatal Infections Rare Diseases Clinical Research Consortium (RDCRC)	University of Alabama at Birmingham	000522211-022		-\$38
93.855	Congregate air sampling for population-based detection of tuberculosis		DAI131082A	\$417,863	\$736,621
93.855	Consortium for HIV/AIDS Vaccine Development (CHAVID)-Scripps	Scripps Research Institute	5-54560		\$10,730
93.855	Consortium for HIV/AIDS Vaccine Development (CHAVID)-Scripps	Scripps Research Institute	Subaward 5-54282		\$77,869
93.855	Contrasting biotic and abiotic drivers of adaptive evolution in a host-pathogen conflict		FAI160906A		\$26,600
93.855	COVID-19 - Antibody responses in symptomatic and asymptomatic SARS-CoV-2 infections	Rockefeller University	SUB00000127		\$313,258
93.855	COVID-19 - Antibody responses in symptomatic and asymptomatic SARS-CoV-2 infections	Rockefeller University	SUB00000188		\$67,937
93.855	COVID-19 - Deciphering the Inositol Phosphate Code in Viral Pathogenesis and Immunity		RAI140186ACV		\$171,958
93.855	COVID-19 - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG) [UM1AI068636]	University of California, Los Angeles	1560 G YB820		\$29,685
93.855	COVID-19 - Obesity and COVID-19: Role of Adipose Tissue		RAI159024A		\$37,693
93.855	COVID-19 - Optimizing a small molecule inhibitor of SARS-CoV-2 replication and associated cytokine storm		RAI158467AC6		\$2,592
93.855	COVID-19 - Rapid development of SARS-CoV-2 specific therapeutics that leverage virus specific RNA elements		RAI132191ACV		\$637,667
93.855	COVID-19 - Unique lung organoids to study Covid-19 pathogenesis and response to treatment	University of Alabama at Birmingham	000520244-SP008-SC011		\$25,477
93.855	COVID-19 Prevention Network (CoVPN) Stanford Site	Fred Hutchinson Cancer Research Center	0001041422		\$148,468
93.855	Cryo-ET Structural Biology of Herpesvirus Infection and Morphogenesis In Situ.		RAI159375A		\$9,609
93.855	CTLA4 expressed in B-1a regulates B-1a immune function		RAI129939A		\$125,087
93.855	Culture-free pathogen tracking in hospitalized patients		RAI143757A		\$810,702
93.855	CYTIF Immune Monitoring Course	University of Alabama at Birmingham	000520244-SP008-SC003		\$81,623
93.855	Deciphering the Inositol Phosphate Code in Viral Pathogenesis and Immunity		RAI140186A		\$432,100
93.855	Deciphering the pathogenesis of severe dengue in natural infection in children via single-cell approaches	University of Alabama at Birmingham	000520244-SP008-SC005		\$34,434
93.855	Defining Mechanisms of Viral Persistence in Situ at the Single-cell Level	Oregon Health & Science University	1016000_STANFORD		\$48,007
93.855	Defining the Role of Host Hsp70 Subnetworks in Dengue Virus Replication		RAI127447A		\$453,852
93.855	Delivery Technologies for In Vivo Genome Editing	Beth Israel Deaconess Medical Center	01061849		\$1,064
93.855	Delivery Technologies for In Vivo Genome Editing	Beth Israel Deaconess Medical Center	01062663		\$144,697
93.855	Dengue Human Immunology Project Consortium (DHIPC) - Systems Vaccinology of the Vi Conjugate Typhoid Vaccine in Infants	Icahn School of Medicine at Mount Sinai	0255-C145-4609		-\$631
93.855	Detection of asymptomatic Salmonella enterica serotype Typhi and Paratyphi A carriage by serum antibodies targeting YncE	Massachusetts General Hospital	233137		\$20,090
93.855	Determining the role of Hepatocyte Nuclear Factor 4 (HNF4) in infection-induced metabolic dysregulation.		FAI143002A		-\$35,664



**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.855	Developing CRISPR genome editing technology for Entamoeba		RAI149268A		\$154,967
93.855	Development of Antibiotic Adjuvants for the Treatment of Chronic Suppurative Otitis Media		RAI154097A		\$441,883
93.855	Differentially Culturable Tubercle Bacteria - The missing link in TB Transmission	Wits Health Consortium	D1811140-05		\$99,316
93.855	Disentangling the human-vector relationship to disrupt dengue and chikungunya outbreaks in Kenya		RAI102918C	\$204,039	\$732,823
93.855	Disrupting IgE-FcR1 Interactions: Novel Therapies for Allergic Disease		FAI120510A		-\$11,118
93.855	Dissecting Mechanisms of Granuloma Macrophage Polarization and Granuloma Formation in Chronic Salmonella Infection		KAI143796A		\$168,267
93.855	DIVINCI: Dissection of Influenza Vaccination and Infection for Childhood Immunity	St. Jude Children's Research Hospital	112525020-7931358		\$73,716
93.855	DNA Repair and Mitochondrial Dysfunction in T Cell Aging		RAI108906B		\$55,800
93.855	Drivers of strain-specific and strain-transcendent antimalarial immunity in childhood	University of California, San Francisco	122198c		\$21,528
93.855	Drug Development against Entamoeba Histolytica		RAI146651A		\$143,310
93.855	Effects of aging on primary and secondary vaccine responses in a 15-year longitudinal cohort		RAI130398A		\$380,704
93.855	Effects of IgE Blockade on T Cells in Food Allergy		RAI140134A		\$374,919
93.855	Emerging novel mechanisms of antibiotic resistance in the prevalent foodborne pathogen, Salmonella		RAI148623A		\$405,512
93.855	Endemic and emerging arboviruses as causes of acute febrile and neurological illness, Paraguay	Emory University	A229773		\$11,109
93.855	Enhancing immunity to malaria in young children with DP chemoprevention		UAI155325A		\$13,951
93.855	Enhancing surveillance systems to slow the spread of antimicrobial-resistant gonorrhea in the United States	Yale University	GR109896 (CON-80002439)		\$34,875
93.855	Establishing ferret models to optimize new influenza vaccines that replace original antigenic sin with initial blessings of induced immunity	University Of Pennsylvania	580222; PO # 4573875		\$22,864
93.855	Evaluating health and economic effects of targeted strategies in TB/HIV	Yale University	GR101920 (CON-80001107)- 04		\$18,760
93.855	Evaluating the role of allergen dose and duration in the safety and efficacy of multi-allergen oral immunotherapy with Omalizumab		UAI130839A		\$246,855
93.855	Evolution of drug resistance in Candida glabrata		RAI136992A	\$179,235	\$596,023
93.855	Exosomes and the Immune Response in Allograft Outcomes in Pediatric Transplant Recipients		UAI135950A		\$470,889
93.855	COVID-19 - Exosomes and the Immune Response in Allograft Outcomes in Pediatric Transplant Recipients		UAI135950ACV	\$186,546	\$585,322
93.855	Exploiting the Host-HIV Interface to Identify Biomarkers Predicting Time to Viral Rebound after Treatment Interruption	J. David Gladstone Institutes	SC-00001		\$18,752
93.855	Explorative studies of novel IgE ligands		RAI144645A		\$208,623
93.855	Exploring MetAP2 as a viable drug target for Entamoeba and Naegleria		RAI142487A	\$35,656	\$155,299
93.855	Functional Analysis Of Pathogenic And Protective Peanut Allergen-Specific Human Antibodies		RAI125567A		\$357,042
93.855	Functional genetics of human innate immunity in the bimodal gamma delta T cell response to Epstein-Barr Virus and in education of NK cells and their re-education to respond to autologous cells		RAI136952A		\$1,010,353
93.855	Giant MagnetoResistive (GMR) Sensors for Measuring Influenza Vaccine		RAI125197A		\$1,011,091
93.855	Glycan-Lectin Receptor Regulation of Macrophage Maturation and Lung Innate Defenses in the Fetus and Newborn Infant		RAI142864B		\$147,918
93.855	Harnessing the Unique Biogenesis of the Apicomplexan plastid organelle for Antimalarial Targets		RAI141366A		\$731,017
93.855	HIPC: System Biological Analyses of Innate and Adaptive Responses to Vaccination	Emory University	A351485		\$734,208
93.855	HIPC: System Biological Analyses of Innate and Adaptive Responses to Vaccination	Emory University	A352713		\$95,513
93.855	COVID-19 - HIPC: System Biological Analyses of Innate and Adaptive Responses to Vaccination	Emory University	A351513		\$1,271,513
93.855	HIV Drug Resistance Database		RAI136618A		\$875,819
93.855	HIV Eradication Through Latency Reversal With New Potent PKC Modulators	University of California, Los Angeles	2301 G UC641		\$383,974
93.855	HIV-1 Leader Mutations During RT Inhibitor Therapy		RAI147682A		\$55,871
93.855	Host blood biomarkers for the diagnosis, prognosis and treatment response of childhood TB	University of Cape Town	ERA28691		\$10,615
93.855	Host Determinants of Adeno-Associated Virus Entry and Trafficking		RAI130123A		\$469,428
93.855	Host determinants of enterovirus RNA replication and in vivo neuropathogenesis		RAI153169A		\$93,211
93.855	Host Genes Critical for Flavivirus Infection		RAI141970A		\$455,215
93.855	Host-virus interactions in the control of the filovirus entry	Albert Einstein College of Medicine	311251		\$15,455
93.855	Host-virus interactions in the control of the filovirus entry	Albert Einstein College of Medicine	311251; P0826300		\$25,111
93.855	Human Cytomegalovirus Entry into Cells Mediated by Pentamer and Trimer Complexes	Oregon Health & Science University	1018176_STANFORD		\$225,909
93.855	Human Lung Organoid Models of SARS-CoV-2 Infection		UAI116484B		\$274,457
93.855	COVID-19 - Human Lung Organoid Models of SARS-CoV-2 Infection		UAI116484ACV	\$154,972	\$811,626
93.855	Identifying The Machinery That Translocates Toxoplasma Effectors Into The Host Cell		RAI129529A		\$480,219
93.855	Immune Tolerance Network	Benaroya Research Institute at Virginia Mason	FY20ITN357		\$13,404
93.855	Immunization against filamentous bacteriophages to prevent bacterial infection	University of Montana	PG18-61062-01		\$391,978
93.855	Immunization against Pf bacteriophage in Pseudomonas aeruginosa infection		KAI151089A		\$87,678
93.855	Impact of HIV exposure, feeding status, and microbiome on immune ontogeny and vaccine responses in infants		UAI131302A	\$251,427	\$419,632
93.855	Implicit Bias in the Evidence: An Evaluation of Female-Predominant Disease		RAI154533A		\$367,564
93.855	In vivo Wireless Sensors for Gut Redox Monitoring to Understand Host and Microbe Physiology		RAI163489A		\$6,443
93.855	Induced host immune response to HIV-1 after antibody therapy		KAI129739A		\$19,185
93.855	Influenza Immunity: Protective Mechanisms Against A Pandemic Respiratory Virus		8-UAI057229B	-\$2,096	-\$2,096
93.855	Influenza responses and repertoire in vaccination, infection and tonsil organoids		UAI057229D	\$164,314	\$2,655,398
93.855	COVID-19 - Influenza responses and repertoire in vaccination, infection and tonsil organoids -NOT-AI-20-031- COVID-19		UAI057229DCV		\$2,542,774
93.855	Insights into immune-related disease born from population genomics	University of Colorado Denver	FY21.1050.001		\$100,603
93.855	Insights into immune-related disease born from population genomics	University of Colorado Denver	FY21.1050.001/2-5-M9381		\$9,996
93.855	Insights into immune-related disease born from population genomics		UAI090905B		-\$309
93.855	Insights into immune-related disease born from population genomics		UAI090905B	\$101,736	\$101,736
93.855	Integrated Genomic and Functional Studies of Immunotherapy for Multi-Food Allergy		UAI104209C		\$1,289,386
93.855	Integrating genomic and spatial approaches for targeted control of HIV-associated tuberculosis epidemics	Yale University	GR110924 (CON-80002720)		\$42,213
93.855	Integrating microfluidic vortex shedding-mediated gene delivery into the development and manufacture pipelines of adoptive cellular immunotherapies	Indee Labs	210194		\$11,009
93.855	Investigation of Epigenetic Dysregulation in Lupus NK Cells		RAI159578A		\$13,450
93.855	ITN - Pre-SunBeam Protocol 3: Evaluation of novel skin tape transcriptome methods in infants	Benaroya Research Institute at Virginia Mason	FY20ITN384		\$10,119

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.855	ITN087AD Anti-IL33 Study	Benaroya Research Institute at Virginia Mason	FY20ITN313		\$40,431
93.855	Malaria Evolution in South Asia	University Of Washington	UWSC9949/ BPO49187		\$30,523
93.855	Malaria Evolution in South Asia	University Of Washington	UWSC9949/ BPO55732		\$5,044
93.855	Measuring spillover effects of reactive, focal malaria elimination interventions		KAI141616B		\$29,325
93.855	Mechanisms of Diet-Induced Pathogen Expansion in the Gut		RAI131249A		\$610,087
93.855	Mechanisms of persistent Salmonella infection		RAI116059A		\$111,540
93.855	Mechanisms of persistent Salmonella infection		RAI116059B		\$227,750
93.855	Mechanisms regulating immunity to dengue viruses	Rockefeller University	SUB00000115		\$363,261
93.855	Mechanisms regulating immunity to dengue viruses	Rockefeller University	SUB00000185		\$102,874
93.855	Mechanistic studies to assess the effect of omalizumab on immune cells in conjunction with randomized, controlled rapid multifood OT (CoFAR1) trial	Johns Hopkins University	2004200730		\$73,122
93.855	Mechanistic studies to assess the effect of omalizumab on immune cells in conjunction with randomized, controlled rapid multifood OT (CoFAR1) trial	Johns Hopkins University	2004200730 / UM2 AI130836		\$124,913
93.855	Memory T cell development and survival in T cell responses of older individuals	Palo Alto Veterans Institute for Research	GOR0011-01		\$27,523
93.855	Metabolic Aldehydes As Immune Effectors Against Tuberculosis	New York University	20-00-00-1003829/POM200367614		\$12,172
93.855	Metabolic imprinting of dendritic cell fate and function in tissues		RAI048638H		\$458,003
93.855	Metagenomic shotgun microbial sequencing in post-transplant lymphoproliferative disorders (PTLD-MSMS)	Washington University in St. Louis	WU-19-427 // PO 2940847H		\$92,768
93.855	MHC & KIR Sequencing and Association Analyses in the iGeneTRAIN Studies Effort	University Of Pennsylvania	580695 PO 4603308		\$40,128
93.855	MHC & KIR Sequencing and Association Analyses in the iGeneTRAIN Studies Effort	University Of Pennsylvania	582580 PO 4706814		\$5,391
93.855	microRNA Regulation of T Cell Senescence	Palo Alto Veterans Institute for Research	GOR0010-03		\$68,576
93.855	Miniaturized Automated Whole Blood Cellular Analysis System		UAI118648A		\$47,459
93.855	Modulation of the B cell response to dengue virus infection by Plasmodium falciparum co-infection		KAI127909A		\$157,535
93.855	Molecular and Cellular Immunobiology		TAI007290G		\$7,709
93.855	Molecular and Cellular Immunobiology		TAI007290H		\$534,813
93.855	Molecular and single-cell immunology of myalgic encephalomyelitis / chronic fatigue syndrome		RAI139550A		\$857,864
93.855	Molecular Basis of Host Parasite Interaction		TAI007328H		\$404,831
93.855	Molecular Interactions of HIV-1 with the Nuclear Pore Complex	Emory University	A237546		\$159,405
93.855	Molecular Mechanisms of Inflammation Activation During Salmonella Infections		RAI095396C		\$270,776
93.855	Multi-omic Biomarker Discovery and Validation in Heart Transplant Patient Populations	University Of Pennsylvania	579036 PO 4663833		\$247,620
93.855	Nano-optical reporters of dynamic mechanotransduction in the immune system		DAI152072A		\$388,662
93.855	Natural killer cell engineering to target the HIV reservoir	University of California, Los Angeles	2301 G YG461		\$84,453
93.855	New Horizons In The Prevention And Treatment Of Food Allergy- Outmatch	Johns Hopkins University Hospital	2004474750		\$292,179
93.855	Novel transcription factors modulating the development and function of pDCs and pDC-related cells		RAI163775A		\$6,331
93.855	Omics for TB: Response to Infection and Treatment	Seattle Children's Hospital	12542SUB		\$30,708
93.855	Optimal targeting for individual and population-level TB prevention	Harvard School of Public Health	117164-5113037		\$14,995
93.855	Parasite-specific proteasome inhibitors to combat multi-drug resistant malaria		RAI127581B	\$130,555	\$329,735
93.855	Portable Nanostructured Photonic Crystal Device for HIV-1 Viral Load		RAI120683A	\$176,578	\$181,508
93.855	PPISeq: High-Throughput Protein-Protein Interaction Sequencing		RAI164530B		\$8,863
93.855	Prevention Center U01: Early Targets For Antigen-Specific Tolerance Induction in Preclinical Rheumatoid Arthritis (Project number: 2-5-24210)	University of Colorado Denver	FY18.090.001 2-5-M9073		\$188,046
93.855	Prevention Center U01: Early Targets For Antigen-Specific Tolerance Induction in Preclinical Rheumatoid Arthritis (Project number: 2-5-24210)	University of Colorado Denver	FY22.090.003_AMD4, 2-5-M9074		\$3,102
93.855	Primary Immune Deficiency Treatment Consortium	University of California, San Francisco	100778c		\$1,589
93.855	Primary Immune Deficiency Treatment Consortium	University of California, San Francisco	120538c		\$39,833
93.855	Profiling the protective B cell response to HCV		UAI123862A	\$169,118	\$432,933
93.855	Programmed Cell Removal (PrCR) by Macrophages: recognition and phagocytosis of target cells		RAI143889A		\$303,439
93.855	Regulation of the IgG Fc domain repertoire		RAI139119A		\$735,219
93.855	Regulatory control of inflammatory cytokine production by a linear ubiquitin-binding protein		KAI155818A		\$73,835
93.855	Repertoire studies of human antibodies to RSV and MPV F		RAI137523A	\$261,825	\$593,258
93.855	Role of nociceptive sensory neuron/mast cell interactions in cutaneous allergic inflammation		RAI132494A		\$518,626
93.855	Roles for hepatitis C virus-derived circular RNAs in infected cells		RAI151715A		\$16,825
93.855	Roles for microRNA-122 and circular RNAs in flavivirus RNA amplification		RAI069000C		\$546,478
93.855	Salmonella Expansion in the Gut		RAI142208A		\$46,586
93.855	Sample-to-Answer Rapid, Multiplexed and PCR-Free Detection of Arboviral Fever Diseases in Resource Limited Settings	University of California, Santa Cruz	A21-0230-S001/P0754618		\$51,921
93.855	SEAL (Stopping Atopic dermatitis and Allergy) Study: Prevent allergy by enhancing the skin barrier		UAI147462A	\$257,992	\$823,346
93.855	Single Cell Characterization of Latent HIV-1 Reservoirs	University of California, San Francisco	98158c		\$4,175
93.855	Small molecule degraders of HIV-1 Nef		RAI156928B		\$32,730
93.855	Small molecule-induced degradation of dengue proteins as an antiviral strategy		RAI148632B		\$22,218
93.855	Small RNA regulation of gene expression in Entamoeba		RAI121084A		\$434,276
93.855	Stanford Cooperative Research Center for Novel, Alternative Model Systems for Enteric Diseases		UAI116484A		\$22,788
93.855	Stanford TRANSFORM I2T Program		RAI147369A		\$410,018
93.855	Storage and recall of human B cell memory of influenza over tissues and time		RAI127877A	\$1,082	\$212,173
93.855	Strategies for tuberculosis control in prisons		RAI130058A	\$217,458	\$477,174
93.855	Structural and Functional Characterization of the Ebola Virus Replication Complex"	Washington University in St. Louis	WU18-66-MOD-3 / PO #2934346E		\$114,249
93.855	Structural correlates of T cell receptor signaling		RAI103867B		\$534,665
93.855	Structural interrogation of the HIV -1 5' leader by multidimensional chemical mapping and integrative modeling		RAI145647A		\$53,267
93.855	Structure and function of EBV protein complexes that trigger epithelial cell entry.	Northwestern University	60049111 SU		\$220,872
93.855	Structure, function and engineering of immune cytokine receptor signaling		RAI051321E		\$394,451
93.855	Structure-based vaccine design for hepatitis C virus	University Of Maryland At College Park	50917-Z0022201		\$524,573
93.855	Systemic Allergic Reactions to SARS-COV-2 Vaccination (SARS Vaccination)	Benaroya Research Institute at Virginia Mason	FY21ITN458		\$1,931

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.855	COVID-19 - Systemic Allergic Reactions to SARS-COV-2 Vaccination (SARS Vaccination)	Benaroya Research Institute at Virginia Mason	FY21ITN458		\$198,747
93.855	Systems Approach to Immunity and Inflammation Core E - CyTOF Flow Cytometry	Scripps Research Institute	5-54095		\$3,357
93.855	Systems Approach to Immunity and Inflammation Core E - CyTOF Flow Cytometry	Scripps Research Institute	5-54096		\$137
93.855	Systems Approach to Immunity and Inflammation Core E - CyTOF Flow Cytometry	Scripps Research Institute	5-54339		\$232,780
93.855	Systems Approach to Immunity and Inflammation Core E - CyTOF Flow Cytometry	Scripps Research Institute	5-54340		\$54,329
93.855	COVID-19 - Systems Approach to Immunity and Inflammation - Supplement	Scripps Research Institute	5-54301		\$572,019
93.855	COVID-19 - Systems Approach to Immunity and Inflammation Core E - CyTOF Flow Cytometry	Scripps Research Institute	5-54341		\$75,306
93.855	COVID-19 - Systems Approach to Immunity and Inflammation Core E - CyTOF Flow Cytometry	Scripps Research Institute	5-54391		\$800,045
93.855	Systems Biology of Early Atopy (SUNBEAM)	Johns Hopkins University	2004813184		\$184,366
93.855	Systems Biology of Early Atopy (SUNBEAM)	Johns Hopkins University	PO #: 2004813184		\$218,266
93.855	Systems Modeling Guided Bone regeneration	Cincinnati Children's Hospital Medical Center	138679 / PO 3100707558		\$12,808
93.855	Systems Pharmacological Analysis of Drug Efficacy in Inflammatory Bowel Disease		FAI124553A		\$1,413
93.855	T Cell Reagent Research for Monitoring T-Cells in Food Allergy		UAI140498A		\$387,307
93.855	Targeting Inflammation and Alloimmunity in Heart Transplant Recipients with Tocilizumab	Massachusetts General Hospital	232560		\$19,185
93.855	Technology development for point-of-care detection and antimicrobial susceptibility testing of Neisseria gonorrhoeae	Johns Hopkins University	2004139484		\$117,974
93.855	The Impact of Epstein Barr Virus Infection on the Immune Response in Pediatric Transplant Recipients		UAI135947A		\$399,177
93.855	COVID-19 - The Impact of Epstein Barr Virus Infection on the Immune Response in Pediatric Transplant Recipients		UAI135947ACV		\$172,183
93.855	The role of oxidative stress in the pathogenesis of Reticular Dysgenesis and the therapeutic potential of antioxidants		KAI123571B		\$108,334
93.855	Therapeutic Development of RNAi-Based Inhibitors Against the Hepatitis Delta Virus	SomaGenics Inc	SPO #130234		\$59,086
93.855	Therapeutics for Post-Tx Lymphoproliferative Disorder		RAI113130B		\$220,825
93.855	Tissue Cytokine Sequestration and Immune Regulation in Autoimmunity		UAI101984D		\$688,328
93.855	Tomotherapy and Hematopoietic Stem Cells for Tolerance to MHC Disparate Kidney	University of Wisconsin	0000000814		\$116,480
93.855	Tomotherapy and Hematopoietic Stem Cells for Tolerance to MHC Disparate Kidney	University of Wisconsin	Sub 0000001548		\$6,741
93.855	Toxoplasma Rhopty Function		RAI021423G		\$211,405
93.855	Transitional dendritic cells: identifying the origin and role of a novel innate immune population during viral infection		RAI158808A		\$183,871
93.855	Ultrasensitive HIV viral load quantitation using designer DNA nanostructure captureprobes and photonic resonator interference scattering microscopy		RAI159454A		\$165,074
93.855	Ultrasensitive Point-of-Care Diagnostics of Zika Infections Prior to Seroconversion	University of California, Santa Cruz	A19-0123-S001-P0675069		\$32,497
93.855	Using collaborative cross mice to monitor resilience to malaria		RAI145365A		\$113,991
93.855	Vaccine Induced Immunity in the Young and Aged	Emory University	A335539		\$126,122
93.855	Vaccine Induced Immunity in the Young and Aged - TDP	Emory University	A333350		\$157,000
93.855	Vaccine-Induced Immunity in the Young and Aged	Emory University	A161761/A335561		\$389,310
93.855	Vaccine-Induced Immunity in the Young and Aged	Emory University	A489727 (formerly A335561)		\$74,578
93.855	Validating the Flavivirus Envelope Protein as an Antiviral Target		1239931-300-EAFGS		\$35,164
93.855	Varicella-Zoster Virus: T Cell/Skin Tropism & Immunity		RAI020459H		\$168,423
93.855	Varicella-Zoster Virus: T Cell/Skin Tropism & Immunity		RAI020459I		\$70,735
93.855	Viral GPCR recognition of chemokines and engineered ligands		RAI125320A		\$331,090
93.855	Viral use and mimicry of autophagy pathways and components		RAI134912A		\$400,999
93.855	Yellow fever in Brazil: new insights on an old disease		RAI149614A		\$234,352
93.855	YR2 - Immune Tolerance Network	Benaroya Research Institute at Virginia Mason	FY20ITN357		\$17,636
93.856	Imaging Chemotherapy-Induced Brain Damage in Pediatric Cancer Survivors		RHD101129A		\$100,465
93.859	3 D Electron Microscopy of Macromolecules		PGM103832I		\$130,031
93.859	A central control system for mitochondrial navigation in neurons		RGM143258A		\$52,395
93.859	A comparative population genomic approach for high-resolution inference of natural selection in fruit flies		FGM135998A		\$64,024
93.859	A model-driven investigation into the role of operon structure and sub-generational expression in Escherichia coli		FGM137528A		\$23,618
93.859	A nanophotonic approach to building DNA using enzymatic synthesis		RGM138716A		\$573,772
93.859	A Stanford - SJSU Postdoctoral Training Program to Enhance URM Teaching		KGM088033B		\$66,546
93.859	A Stanford-San Jose State University Postdoctoral training program to enhance URM teaching		8-KGM088033A		-\$66,546
93.859	A Synchrotron Radiation Structural Biology Resource		PGM103393H		\$224,256
93.859	A Synchrotron Radiation Structural Biology Resource		PGM133894A	\$96,936	\$5,273,819
93.859	A universal pipeline for functional characterization of the human microbiota at a massive scale	Massachusetts Institute of Technology	S5064-PO 470995		\$400,806
93.859	A universal pipeline for functional characterization of the human microbiota at a massive scale	Massachusetts Institute of Technology	S5065 - PO 473143		\$504,079
93.859	Anesthesia Training Grant in Biomedical Research		TGM089626B		\$6,688
93.859	Bacterial Cell Wall Composition and the Influence of Antibiotics		RGM117278B		\$416,368
93.859	Binuclear Copper-O2 Hydroxylation Reactivity: Role of CuII?		RGM120187A		\$178,496
93.859	Biochemical and cell biological mechanisms of signal transduction through the Hedgehog pathway		RGM118082A		\$437,695
93.859	Biochemical reconstitution of Wnt signaling complexes		FGM126642A		\$19,660
93.859	Biophysical studies of macromolecules and molecular assemblies		RGM118044A		\$602,913
93.859	Biophysical studies of macromolecules and molecular assemblies		RGM118044B		\$170,451
93.859	Bistability and trigger waves in cell signaling		RGM131792A		\$879,206
93.859	Capturing the phenotypic landscape of single-nucleotide variation via systematic genome editing		RGM121932A		\$665,758
93.859	Cell Signaling and Cell Decisions		RGM127026A		-\$20,502
93.859	Cell-cycle commitment in muscle regeneration		FGM139260A		\$67,111
93.859	Cellular and Molecular Biology Training Program		TGM007276J		\$1,202,333
93.859	Cellular Response to Genetic Change		RGM130366A		\$569,620
93.859	Center For The Structural Biology of Cellular Host Elements In	University of Utah	10044932-05 PO# U000270197		\$43,966
93.859	Center For The Structural Biology of Cellular Host Elements In	University of Utah	10044932-05; PO #U000230614		\$1,680
93.859	Charactering the impacts of regulatory epistasis with high-throughput precision genome editing		FGM131561A		\$62,498
93.859	Characterization and Modulation of Caspase 4-Mediated Pyroptosis		FGM134689A		\$64,466
93.859	Characterizing the Regulation of Ferroptosis		RGM122923A		\$349,979

STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM  
YEAR ENDED AUGUST 31, 2021

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.859	Chemical Glycobiology Tool Development: LYTACs		RGM058867F		\$588,338
93.859	Chemical tools for developmental biology		RGM127030A		\$851,853
93.859	Chemogenetic control of kinase and phosphatase activity by modulating autoinhibition		RGM141677A		\$51,659
93.859	Chromatin Dynamics in the Cell Cycle		FGM125246A		\$25,967
93.859	Ciliary trafficking mechanisms underlying the human genetics of obesity		RGM121565A		\$194,215
93.859	Combining systems biology and structural biology to find new therapeutics		RGM102365B		\$244,052
93.859	Comparative systems biology defines regulatory mechanisms in whole-body regeneration		RGM138061A		\$433,721
93.859	Computational- and experimental- driven discovery of splicing regulation and circRNA function		RGM139517A		\$248,930
93.859	Conserved regulation of the switch from proliferation to differentiation in the germ line stem cell lineage		RGM122951A		\$81,636
93.859	Cost Effective, Synergistic Macromolecular Structure Determination, Analysis & Simulation		RGM122543A		\$425,414
93.859	Covalent Profiling of RNA Targets and Off-targets		RGM130704A		\$415,447
93.859	Data-Rich Strategies for Programming Ligand-Responsive RNA Regulatory Systems		RGM086663B		\$36,450
93.859	Data-Rich Strategies for Programming Ligand-Responsive RNA Regulatory Systems		RGM086663C		\$28,879
93.859	Delineation of genetic architecture underlying complex traits at molecular, individual and population levels		RGM127063A		\$260,561
93.859	Determining how cell growth triggers cell division		RGM134858A		\$440,662
93.859	Determining how the G1/S cell cycle transition regulates the homeostasis of adult intestinal stem cells		FGM129878A		-\$21
93.859	Determining the molecular mechanism controlling cell size in mammalian epithelia		KGM138712A		\$81,265
93.859	Determining the molecular mechanisms controlling cell size		FGM137522A		\$30,875
93.859	Developing nanoparticle optical reporters of compressive, tensile, and shear forces for use in living cells and tissues.		RGM129879A		\$114,980
93.859	Developing nanoscale electrophysiology sensors for robust intracellular recording		RGM125737A		\$260,580
93.859	Discovering the mechanism of GPCR-mediated arrestin stimulation to enable effective drug therapies		RGM127359A		\$491,837
93.859	Discovering the mechanisms and functions of signaling by the calcineurin beta1 isoform		RGM129236A		\$233,737
93.859	Discovery and Engineering of Plant Natural Product Pathways		RGM121527A		\$304,866
93.859	Dissecting principles of transcription factor binding		FGM135996A		\$57,280
93.859	Dynamic Mechanisms of Fate Control during Epithelial Organ Renewal		RGM116000A		\$117,593
93.859	Dynamic pathways of eukaryotic translation initiation		RGM113078A		-\$9,287
93.859	Dynamic polarity mechanisms controlling stem cell asymmetry during tissue development		FGM133102A		\$54,824
93.859	Dynamics of developmental strategies that drive cell identity and plasticity		FGM129918A		\$25,304
93.859	Dynamics of eukaryotic translation initiation and its control		RGM113078B		\$756,945
93.859	Dynamics of Translation		RGM051266H		\$307,245
93.859	Ebola modeling: behavior, asymptomatic infection, and contacts	University of California, San Francisco	116478c		\$7,736
93.859	Electronic Structure of Heme Enzyme Intermediates from Resonant Inelastic X-ray Scattering and L-Edge X-ray Absorption Spectroscopy		FGM122194A		\$51,004
93.859	Epigenetics in the extreme - investigating heritability driven by disordered RNA binding proteins in development and cancer		KGM128180A		-\$172
93.859	Evolutionary Genomics of Yeast		RGM097171C		\$423,861
93.859	Fibroblast lineage mechanisms of skin regeneration		RGM116892A		\$260,414
93.859	Fitness Effects of Beneficial Mutations		RGM131824A		\$594,124
93.859	FLWSHIP F.Agmon, PI M.Covert-Adding an environment and motility in a Whole Cell Model of Escherichia Coli		FGM137464A		\$68,423
93.859	FLWSHIP-The Role of Membrane Architecture in Primary Cilium Signaling		FGM142181A		\$24,993
93.859	FLWSHIP C.Jakobson, PI D.Jarosz-Using self-templating proteins to spatiotemporally organize biochemistry		FGM125162A		-\$4,014
93.859	From proteins to cells to tissues: A multi-scale assessment of biomechanical regulation by the myosin molecular motor		RGM131981A	\$956,949	\$1,960,711
93.859	Function of PHD Domain Proteins in Chromatin Regulation		RGM079641D		\$87,076
93.859	Function of Protein Methylation in Chromatin and Signaling Regulation		RGM139569A		\$326,092
93.859	Fundamental Studies of RNA Conformational Thermodynamics		RGM132899A	\$183,342	\$742,630
93.859	Genes, cells, and pathways that regulate urochordate allogeneic stem cell competition and their mammalian homologues		RGM100315B		\$891
93.859	Genetically encoded photoswitchable antibody mimetic proteins for spatiotemporal control of molecular recognition		RGM132687A		\$109,626
93.859	Genetics and Developmental Biology Training Program		TGM007790I		\$580,453
93.859	Genomics of rapid adaptation in the lab and in the wild		RGM118165A		\$380,897
93.859	Genomics of rapid adaptation in the lab and in the wild		RGM118165B		\$193,584
93.859	Genomics of RNA Editing: Identification and Regulation		8-RGM102484A		-\$479
93.859	Genomics of RNA Editing: Identification and Regulation		RGM102484C	\$22,805	\$325,470
93.859	Graduate Training in Stem Cell Biology and Regenerative Medicine		TGM119995A		\$478,816
93.859	Graduate Training Program in Biotechnology		TGM008412E		\$260,329
93.859	Graduate Training Program in Biotechnology		TGM141819A		\$11,686
93.859	Guanidinium Toxins as Molecular Probes for Nav Study		RGM117263A		\$290,471
93.859	Guanidinium Toxins as Molecular Probes for Nav Study		RGM117263B		\$222,096
93.859	Harnessing the human monocyte system to improve surgical recovery		RGM137936A		\$487,335
93.859	High resolution imaging of genome structure and gene regulation in development		DGM132935A		\$661,775
93.859	High-resolution modeling of protein-RNA interfaces	Fred Hutchinson Cancer Research Center	0001005574		-\$22,809
93.859	High-resolution modeling of protein-RNA interfaces	Fred Hutchinson Cancer Research Center	0001044379		\$214,961
93.859	High-throughput precision genome editing to characterize natural genetic variants		RGM134228A		\$565,334
93.859	HIV Vpr, CRL4, DCAF1 E3 ligase and their targets	Case Western Reserve University	RES512573		-\$4,977
93.859	Identifying the Human Calcineurin Signaling Network		RGM119336A		\$21,431
93.859	In vivo characterization of CNE/SNPs and identification of cis (dys)regulated genes		RGM136741A	\$75,876	\$118,726
93.859	In Vivo Polarity Establishment and Symmetry Breaking in an Epithelial Tissue		FGM129900A		\$29,478
93.859	Induction of Cell Death by Dietary Fatty Acids	Washington State University	135103 SPC001412		\$25,408
93.859	Integrated Instrument for non-natural aptamer generation		RGM129313A		\$329,514
93.859	Integration of regulatory networks and dynamic subcellular architecture to control the Caulobacter cell cycle		RGM118071A		\$426,231
93.859	Intracranial cortical network connectivity underlying complexity changes during anesthetic emergence		KGM140215A		\$86,745
93.859	Investigating the establishment, structure, and function of microtubule organizing centers in differentiated cells in vivo		RGM133950A		\$324,405
93.859	Ion Channels and Signaling Mechanisms in T Lymphocytes		RGM045374H		\$927,337
93.859	Leveraging environmental drivers to predict vector-borne disease transmission		RGM133439A	\$57,623	\$513,989
93.859	Leveraging high-throughput continuous-flow synthesis of Charge-Altering Releasable Transporter gene delivery vectors to establish structure-function relationships for mRNA delivery		FGM133150A		\$49,313
93.859	Machine Learning for Integrative Modeling of the Immune System in Clinical Settings		RGM138353A		\$331,479

STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM  
YEAR ENDED AUGUST 31, 2021

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.859	Mechanism of the Eukaryotic Chaperonin TRiC/CCT		RGM074074C		-\$341
93.859	Mechanisms and Evolution of Assembly-Line Polyketide Synthases		RGM141799A		\$147,245
93.859	Mechanisms controlling the inactivation of microtubule organizing center function at the centrosome		RGM136902A		\$390,135
93.859	Mechanisms of CLC Transporters and Channels		RGM113195A	\$17,684	\$27,973
93.859	Mechanisms of CLC Transporters and Channels		RGM113195B		\$117,414
93.859	Mechanisms of Kinetochores Assembly		RGM074728D		\$406,724
93.859	Mechanisms of R-loop-Associated Genome Instability		RGM119334B		\$466,528
93.859	Mechanistic Studies of Polyketide Synthases Enabled by Unnatural Amino Acids and Antibody Fragment Structural Tools		FGM136039A		\$62,763
93.859	Mechanoresponsive Engrailed-1-negative fibroblasts activate Engrailed-1 to promote fibrosis in wound healing		RGM136659A		\$438,258
93.859	Medical Scientist Training Program		TGM007365K		\$1,480,993
93.859	Meiotic Chromosome Inheritance in C. elegans		RGM126964A		\$715,524
93.859	Molecular Biophysics Training Program at Stanford		TGM008294H		\$10,551
93.859	Molecular Mechanism of Mitochondrial Membrane Transport		RGM138590A	\$126,613	\$527,002
93.859	Molecular mechanisms of alkane hydroxylase (AlkB) selectivity and reactivity	Barnard College	SU-1R01GM130989-01A1		\$202,061
93.859	Molecular mechanisms of centriolar triplet microtubule formation		KGM131024A		\$96,698
93.859	Molecular mechanisms of Hedgehog receptor function		RGM102498B		\$351,349
93.859	Molecular mechanisms of Wnt and mechanical signaling through -catenin		RGM131747A		\$1,009,133
93.859	Molecular mechanisms that regulate target cell sensitivity to Hedgehog morphogens		KGM132518A		\$93,412
93.859	Molecular mechanisms underlying force transduction at cellular adhesion complexes		RGM130332A		\$632,045
93.859	Molecular Pharmacology Training Grant		TGM113854A		\$10,204
93.859	mRNA Template-free Protein Elongation: a New Paradigm for Quality Control at the Ribosome		RGM115968A		-\$3,134
93.859	mRNA Template-free Protein Elongation: a New Paradigm for Quality Control at the Ribosome		RGM115968B		\$387,678
93.859	Multiplexed Nucleation Approaches for Enhanced High Throughput Screening of Co-Crystals	DeNovX	174038 / R44 GM116285		\$56,370
93.859	Myeloid lineage targeting to improve recovery from injury and surgery: Cellular and molecular mechanisms		RGM137906A		\$464,821
93.859	Myosin Movement in Vitro-Molecular Characterization		RGM033289J		\$223,564
93.859	Myosin Movement in Vitro-Molecular Characterization		RGM033289K		\$205,306
93.859	Nanoscale probes for sensing molecular functions in live cells		RGM141598A		\$194,808
93.859	New Methods of Quantitative Modeling of Protein-DNA Interactions	Duke University	A032233		\$38
93.859	Next-generation computational/chemical methods for complex RNA structures		RGM122579A		\$775,436
93.859	NIH R01_Engineering Cytoskeletal Motors		RGM114627A	\$33,292	\$308,740
93.859	Noninvasive deep-tissue single-cell imaging and nanoprobe development		RGM128089A		\$540,864
93.859	Novel Mechanisms of Regenerative Wound Healing	Baylor College of Medicine	7000000263		\$2,103
93.859	Novel Mechanisms of Regenerative Wound Healing	Baylor College of Medicine	7000001271		\$14,730
93.859	Nucleic Acid Enzymes Studied at the Molecular Level		RGM057035F		\$91,814
93.859	Oxygen Activation by Mononuclear Copper(I) Active Sites		FGM131602A		\$63,805
93.859	Physiology of bacterial metabolism in the human gut microbiome		RGM142873A		\$35,457
93.859	Planar cell polarity mechanisms and systems architecture		RGM131914A		\$989,425
93.859	Platform for high-throughput biomechanical measurements using metallic islands on boron nitride nanosheets	University of California, San Diego	703883		\$11,817
93.859	Precision Medicine for Asian Americans requiring Anesthesia		RGM119522A		\$349,556
93.859	Precision Medicine for Asian Americans requiring Anesthesia		RGM119522B		\$98,490
93.859	Probing the Transcriptome with Multifunctional Acylation Chemistry		RGM127295A		\$376,760
93.859	Protein Folding in the Eukaryotic Cytosol		RGM056433F		\$572,215
93.859	Protein-based Molecular Memories in Gene Regulation, Disease, and Development		DGM119140A		-\$681
93.859	Protg: A Knowledge-Engineering Environment for Advancing Biomedical Sciences		RGM121724A		\$158,145
93.859	Quantitative, High-throughput Mechanistic Enzymology		RGM064798C		\$425,877
93.859	Recombineering-based no-cleavage gene-editing toolkit for large-scale genome engineering and functional screening		RGM141627A		\$6,741
93.859	Reconstitution of Transcription Using TATA-less Promoters		FGM126704A		\$31,769
93.859	Regulation of calcium signaling in microdomains by the calcium pump PMCA4b		FGM140606A		\$9,711
93.859	Regulation of Heterotrimeric G proteins by non-receptor activators	University of Michigan	SUBK00014358 PO 3006261647		\$53,342
93.859	Regulation of proliferation and differentiation in the male germ line adult stem cell lineage		RGM136433A		\$953,496
93.859	Regulation of Signaling by Histidine Protein Methylation		RGM133051A		-\$63,220
93.859	Remodeling the microtubule cytoskeleton during epithelial cell division and differentiation		KGM135489A		\$90,313
93.859	Repurpose open data to discover therapeutics for understudied diseases	Michigan State University	RC110435LSJU		\$87,768
93.859	Research in Anesthesia Training Program (ReAP)		TGM089626C		\$313,276
93.859	Scalable Coalescent Inference for Large Data Sets		RGM131404A		\$352,721
93.859	Seg2-Structure and dynamics of G protein coupled receptor-G protein complexes	University of California, San Diego	KR 703861 / R01 GM083118		\$169,243
93.859	Selective Halogenation Reactions for the Synthesis of Chiral Bioactive Small Molecules		RGM114061A		\$164,041
93.859	Signal Transduction by Oxysterols		RGM106078A		-\$1,354
93.859	Signal transduction in development and disease		RGM118082B		\$62,015
93.859	Signaling in cell expansion and morphogenesis	Carnegie Institution of Washington	6-10756-01		\$131,574
93.859	SimTK: An Ecosystem for Data and Model Sharing in the Biomechanics Community		RGM124443A		\$342,937
93.859	Single-cell analysis and synthetic control of mammalian chromatin dynamics and gene regulation		RGM128947A		\$458,232
93.859	Single-Molecule Analysis of DNA Secondary Structures during DNA Replication		RGM126600A		\$96,645
93.859	Single-Molecule Imaging for Cell Biology and Super-Resolution Microscopy		RGM118067A		\$477,010
93.859	Single-Molecule Imaging for Cell Biology and Super-Resolution Microscopy		RGM118067B		\$190,601
93.859	Spectroscopic Studies of Mono-Nuclear Non-Heme Fe Enzymes		RGM040392I		\$265,160
93.859	Stanford ChEM-H Chemistry/Biology Interface Predoctoral Training Program		TGM120007A		\$286,296
93.859	Structural Biology Center for HIV/Host Interaction in Trafficking and Assembly	University of Utah	10044932-04; PO # U000330629		\$7,889
93.859	Structural Biology Center for HIV/Host Interaction in Trafficking and Assembly	University of Utah	10044932-04; PO# U000275499		\$251,329
93.859	Structural Dynamics and Mechanochemical Coupling in DNA Gyrase		RGM106159B		\$197,993
93.859	Structural Dynamics at LCLS		PGM139687A		\$262,325
93.859	Structure and dynamics of G protein coupled receptor-G protein complexes	University of California, San Diego	PO # S9001445, 78010612		-\$1,643
93.859	Structure and function of SWEET sugar transporters		RGM117108A		-\$1,673
93.859	Structure and function of SWEET sugar transporters		RGM117108B		\$399,243
93.859	Structure and mechanism of the centrosome-cilium complex		RGM130286A		\$658,939
93.859	Structure of RNA Polymerase II		RGM049985H		\$359,199

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.859	Structure, Mechanism, And Engineering Of Assembly Line Polyketide Synthases		RGM087934G		\$359,658
93.859	Studies On Insulin Receptor Iso Forms		RGM125001B		\$378,733
93.859	Subcellular architecture of regulatory protein complexes at the bacterial pole		8-RGM086196B		-\$344
93.859	Systematic approaches to deciphering cis regulation of A-to-I RNA editing		RGM124215A		\$456,069
93.859	Systematic elucidation of calcineurin phosphatase signaling in humans		RGM136243A		\$344,292
93.859	Systems Biology of Collective Cell Decisions		PGM107615A		-\$867
93.859	The Bio-Tinkering Playground	Tech Museum of Innovation	8R25GM129220-02		\$61,325
93.859	The population genomics of hybridization: from adaptation to genome evolution		RGM133774A		\$364,662
93.859	The Role of Chromatin in Metabolic Homeostasis		RGM119580A		\$171,330
93.859	The Role of Chromatin in Metabolic Homeostasis		RGM119580B		\$86,446
93.859	The Role of Membrane Curvature in Surface Nanotopography-Induced Cell Functions		RGM128142A		\$493,242
93.859	The Ubiquitin Proteasome System in ER Quality Control		RGM074874D		\$775,538
93.859	Three-dimensional super-resolution imaging and tracking of disease and treatment mechanisms of progeria		KGM134187A		-\$2,136
93.859	Transcriptional and Epigenetic Control of Pluripotency and Self-Renewal by Honey Bee Royalactin and its human structural analog		RGM136737A		\$440,912
93.859	U24 - CryoEM Data Collection Facility Consortium at NCMI		UGM116787B		\$251,393
93.859	Unbiased discovery of mechanisms regulating circRNA		RGM116847A		\$75,030
93.859	Uncovering fundamentals of gene regulation by enhancers		RGM131757A		\$346,120
93.859	Unified Data Resource for 3DEM		RGM079429D	\$257,541	\$604,773
93.859	Universal Roles of Force Generation and Transmission in Biological Systems	Purdue University	11000645-006 / 4102-83304		\$67,521
93.859	Unnatural Amino Acid Chemistry for Lysine Methyltransferase Substrate Discovery	University of Michigan	SUBK00010346/PO3005760128		\$73,374
93.859	Yeast as a Model for Understanding Gene Expression Adaptation		RGM097171B		\$1,273
93.865	3/3 -A randomized controlled trial of frozen embryo transfers performed in modified natural versus programmed cycles (NatPro)		RHD100334A		\$279,431
93.865	5'UTR RNA Regulons in ribosome-mediated control of embryonic development		RHD086634A		\$127,168
93.865	A Dashboard of Racial/Ethnic Disparity in Care Provided by NICUs		RHD083368A	\$134,888	\$506,482
93.865	A low blood volume platform for global newborn screening of common, treatable conditions	Baebies, Inc.	R44HDO96981-03		\$78,879
93.865	A monkey model of naturally occurring social impairments		RHD087048A	\$290,628	\$416,284
93.865	A transposon-based strategy for optogenetic engineering		RHD100933A		\$261,251
93.865	Brain, Behavior and Puberty in Klinefelter Syndrome		RHD092847A	\$165,396	\$749,231
93.865	Cell Surface Receptor Recognition and Membrane Fusion in Mammalian Fertilization		KHD104924A		\$16,889
93.865	Cell Type-Specific Control Of Gene Expression By Ribosomal Protein Isoforms		FHD100123A		\$38,127
93.865	Cellular mechanisms in immune-driven placental injury		FHD095569A		\$41,308
93.865	Center for Reliable Sensor Technology-Based Outcomes for Rehabilitation (RESTORE)		PHD101913A		\$407,829
93.865	CF_Center for the Development of Phenotype-Based Treatments of Autism Spectrum Disorder	University of California, Davis	A18-0985-S002; CF EXP.		\$171,549
93.865	Characterizing synaptic phenotypes in FXS human organoids and FXS mouse models	Emory University	A413071		\$434,380
93.865	Characterizing synaptic phenotypes in FXS human organoids and FXS mouse models	Emory University	A499114		\$42,661
93.865	Chemical-inducible Epigenome Editors for Allele-specific Gene Regulation in Developmental Disorders		FHD103339A		\$44,701
93.865	Connectivity, activity, and function of a hypothalamic pathway in female social behaviors		RHD104565A		\$21,744
93.865	Continuous Non-Invasive Blood Pressure Monitor for Neonates	PyrAmes Health	Rhine SPO 149124		\$29,911
93.865	Control and coordination of the maternal-to-zygotic transition.		RHD085135A		\$135,087
93.865	Cross-Species Multi-Modal Neuroimaging to Investigate GABA Physiology in Fragile X Syndrome		RHD084214A		\$3,068
93.865	Determinants of ultra-low viral reservoirs in HIV infected children	University Of Washington	UWSC10077 BPO26954/BPO33467		\$147,410
93.865	Developing a wearable computing device to provide vibrotactile stimulation for spasticity relief post-stroke		FHD100104A		\$62,966
93.865	Developing deep learning algorithms for studying infant brain and behavior relationships		DHD102042A		\$440,437
93.865	Development of a novel treatment for hyperbilirubinemia-induced kernicterus		RHD084422A		\$220,206
93.865	Development of allosteric HIPK4 inhibitors as non-hormonal male contraceptives		RHD099720A	\$281,082	\$516,365
93.865	Developmental Pathophysiology of Synapses in a Mouse Model of Fragile X Syndrome		RHD084215A		-\$474
93.865	Disparities in Processes and Outcomes of Care Across Asian/Pacific Islander Populations at Childbirth		RHD103662A		\$29,906
93.865	Do Hair Cortisol and Hair Oxytocin Represent the Stressful and Supportive Experiences of Preschool Children?		RHD099296A		\$523,190
93.865	Dysregulation of Mitochondrial Dynamics in Sepsis		RHD099387B		\$67,804
93.865	Dysregulation of Mitochondrial Dynamics in Sepsis Induced Multi-Organ Dysfunction Syndrome (MODS)		KHD099387A		\$87,953
93.865	Early Infection in High Risk Women A138518	Fred Hutchinson Cancer Research Center	0001027099		\$190,771
93.865	Early language processing skill and school-relevant outcomes in emerging Spanish-English bilinguals		RHD092343A		\$433,162
93.865	Effect of Changing NICU patient volumes and levels of care on neonatal outcomes		RHD084819A	\$44,258	\$44,258
93.865	Effects of Age at Marriage and Education on Health of Mothers and Children	Duke University	A03-3680		\$33,017
93.865	Effects of Maternal Obesity on Offspring Immune System		RHD098688A		\$7,518
93.865	Enhanced Stem Cell Therapy with Rehabilitation Strategies for Peripheral Nerve Regeneration		FHD098808A		\$72,809
93.865	Enhancing Effectiveness of a Dissonance-Based Obesity Prevention Program		RHD093598B	\$415,363	\$541,690
93.865	Environmental, Genetic, and Epigenetic Mechanisms for Hormonal Change at Puberty	University of Texas at Austin	UTA20-000651		\$77,244
93.865	Estrogen reverses progesterin-mediated loss of genital mucosal barrier function		RHD094634A	\$343,292	\$847,935
93.865	Evaluation of ovarian reserve, aging and fertility preservation in women with sickle cell disease		RHD103034B		\$28,540
93.865	Exploring Multiple Environmental Exposures in Combination as Risk Factors for Adverse Pregnancy Outcomes		FHD096754A		\$39,732
93.865	Father Involvement Interventions and Child Mental Health		RHD096184A	\$80,999	\$129,828
93.865	Fear learning in adolescents with chronic pain: Neural and behavioral mechanisms		RHD083270B		-\$15,317
93.865	Fear learning in adolescents with chronic pain: Neural and behavioral mechanisms		RHD083270B	\$7,442	\$7,442
93.865	Feasibility of in-home semen testing in a North American preconception cohort study	Boston University	4500002549		\$934
93.865	FLWSHP K.Jennings, PI de Lecea-Lateral hypothalamic regulation of male and female sexual motivation		FHD095597A		\$68,160
93.865	Genomic Predictors of Pregnancy Loss		RHD105256A		\$89,982
93.865	High Sensitivity Flow Imaging of the Human Placenta with Coherence-Based Doppler Ultrasound		RHD086252A		-\$1,445
93.865	Improving outcomes of periviable births via an enhanced prediction tool		RHD098287A	\$13,211	\$348,857
93.865	In situ simulation of neonatal resuscitation to improve team performance and clinical outcomes		RHD087425A	\$24,568	\$417,457
93.865	Influence of maternal virome and HIV status on infant enteric virome and immune ontogeny	Seattle Children's Research Institute	12533SUB		\$113,496
93.865	Interventions in Math Learning Disabilities: Cognitive and Neural Correlates		RHD059205B		\$113,836
93.865	Intranasal vasopressin treatment in children with autism		RHD091972A		\$378,461

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

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93.865	Investigation of the role of Turner syndrome on approximate number sense		KHD092883A		\$44,719
93.865	ISRIIB as a promising therapeutic for Fragile X syndrome		FHD103451A		\$76,370
93.865	Listening to Mom in the NICU: Neural, Clinical and Language Outcomes		RHD084749B		\$229,264
93.865	Longitudinal fMRI Studies Of Mathematical Disabilities		RHD047520B		-\$364
93.865	Longitudinal investigations of the infant virome and its associations with obesity		RHD088837A	\$54,851	\$268,199
93.865	Longitudinal Neurocognitive Studies of Mathematical Disabilities: trajectories and outcomes		RHD094623A		\$356,658
93.865	Mapping the CPLANE interactome, an extensive protein interaction network underlying human ciliopathies	University of Texas at Austin	UTA16-001173		\$31,707
93.865	Maternal Chronic Pain: Risk for Pain and Poor Outcomes in Children	Oregon Health & Science University	1006408_Stanford		\$38,445
93.865	Maternal Health after Stillbirth: An Investigation of Postpartum Hospital Readmission in California		RHD095034A		\$15,108
93.865	Medical Rehabilitation Research Resource P2C	University of Pittsburgh	AWD00002588 (135108-4)		\$95,100
93.865	Microbial dispersal, skin-to-skin contact, and assembly of the neonatal gut microbiome		RHD100836A		\$62,958
93.865	Molecular images and machine learning to extract placental function from maternal cfDNA		RHD094513A		\$817,350
93.865	MRI and machine learning to improve early prognosis and clinical management after spinal cord injury.	Regis University	2019-002PRU		\$5,773
93.865	Multi-center Randomized Controlled Trial of Refeeding in Anorexia Nervosa	University of California, San Francisco	129148c		\$62,370
93.865	Multi-center Randomized Controlled Trial of Refeeding in Anorexia Nervosa	University of California, San Francisco	90698c		\$542
93.865	Multiplex gene sequencing and metabolomics analysis from newborn dried blood spots to improve screening and diagnosis of metabolic disorders	Yale University	GR111297(CON-80002682)		\$87,459
93.865	National Center for Simulation in Rehabilitation Research		PHD065690B		\$716,091
93.865	Neural mechanisms of successful intervention in children with dyslexia		RHD095861A		\$531,843
93.865	NICHD Cooperative Multicenter Neonatal Research Network		UHD027880F		\$290,785
93.865	NICHD Maternal-Fetal Medicine Units (MFMU) Network		UHD068268B		\$13,719
93.865	Novel pathways regulating calcium mediated contractility in the pregnant uterus		RHD092316A	\$62,270	\$458,983
93.865	Obstetric delivery volume, regionalization, and maternal and infants outcomes.		RHD099197A	\$254,513	\$379,895
93.865	Passive phototherapy to improve sleep in teens		RHD102344A		\$35,491
93.865	Paternal medications and congenital malformations in offspring		RHD096468A	\$11,590	\$18,425
93.865	PediAtric ReseArch of Drugs, Immunoparalysis and Genetics during MODS (PARADIGM)	Research Institute at Nationwide Children's Hospital	700196-0420-00; PO# 4605508		\$7,043
93.865	Personalized Whole Body Staging for Children with Cancer: A Solution to the Conundrum of Long-Term Side Effects from CT and PET/CT Scans		RHD081123A		\$199,327
93.865	Pharmacological and phosphoproteomic studies of HIPK4-dependent spermatogenesis		FHD104494A		\$39,528
93.865	Predicting language processing efficiency in preterm children: Social-environmental and neuro-biological factors		RHD069150B		\$374,538
93.865	Predicting PrEP Uptake and Adherence among Adolescent Girls and Young Women in Sub-Saharan Africa: Leveraging Programmatic and Clinical Trials Data	Fred Hutchinson Cancer Research Center	0001067241		\$36,313
93.865	Preterm Infant Outcomes Following Changes in Oxygen Saturation Targets in California Neonatal ICUs	Connecticut Children's Medical Center	20-181011-01		\$16,439
93.865	Preterm Infant Outcomes Following Changes in Oxygen Saturation Targets in California Neonatal ICUs	Connecticut Children's Medical Center	20-181011-01-01		\$12,823
93.865	Prevention of neonatal opioid withdrawal syndrome		RHD070795C	\$153,877	\$833,673
93.865	Ras/MAPK Mutations Effects on the Developing Brain		KHD090209A		\$156,050
93.865	Ribosomes and Regeneration: Defining the Role of Protein Synthesis in Tissue Development, Homeostasis and Repair		KHD099787A		\$108,218
93.865	S2-Maternal Fetal Medicine Units Network Clinical Center Agreement	George Washington University	21050-31723		\$349
93.865	Sigma-1 Receptors: A Novel Clinical Target in Fragile X Syndrome		RHD095319A		\$113,772
93.865	Social Disparities in NICU Care		RHD084667A	\$13,230	\$57,142
93.865	Specialized filopodia in long range cell signaling and vertebrate tissue patterning		RHD088597A		\$130,689
93.865	Specialized Translational Control of Stem Cell Differentiation and Embryonic Development		RHD086634B		\$414,131
93.865	Stanford Women's Reproductive Health Research Career Development Program		KHD103084A		\$213,893
93.865	Stem cell-derived smooth muscle progenitor cells for vaginal wall prolapse		RHD102224A		\$47,240
93.865	Targeting the neurobiology of restricted and repetitive behaviors in children with autism using N-acetylcysteine		KHD101702A		\$94,714
93.865	The effects of maternal early life stress on perinatal hair cortisol concentration: Implications for infant cortisol and brain volume		RHD101714A		\$46,551
93.865	The influence of health and neighborhood context on economic mobility: Evidence from a social experiment	University Of Minnesota	H006124303 / R01 HD090014		\$52,699
93.865	The Referral and Follow-up Patterns of High-Risk Infants		FHD096778A		\$4,761
93.865	The Value of Hospital Readiness for the Emergency Care of Injured Children	Oregon Health & Science University	1009131_STANFORD- 1		\$16,142
93.865	The Value of Hospital Readiness for the Emergency Care of Injured Children	Oregon Health & Science University	1009131_STANFORD- 2		\$3,239
93.865	Theranostics for Pediatric Brain Cancer		RHD103638A		\$81,934
93.865	Type 1 Diabetes and the Brain in Children: Metabolic Interventions	Nemour Children's Hospital	300224007/PO# 524415-O-RSUB		\$56,333
93.865	Unconventional signaling by the R-spondin family of WNT regulators		RHD101980A		\$202,644
93.865	Understanding the Short- and Long-Term Impacts of Childhood Exposure to Violence: Evidence from School Shootings		RHD102378A	\$39,875	\$195,876
93.865	Validation of the Regulating Emotions in Parenting Scale (REPS) in a Nationally Representative Sample	University of Georgia Research Foundation, Inc.	SUB00002547		\$24,451
93.865	VIRTUUS Children's Study - Validating Injury to the Renal Transplant Using Urinary Signatures In Children	Children's Hospital of Philadelphia	3200880522; PO# 962849-RSUB		\$18,515
93.865	YR4 Center for the Development of Phenotype-Based Treatments of Autism Spectrum Disorder	University of California, Davis	A18-0985-S002		\$377,063
93.866	"Dysregulation of Naive T cell Quiescence during Aging."		KAG068373A		\$116,841
93.866	138117_Hong,NIH RoO_Brain Aging Studies with Single-Neuron Resolution Using Syringe-Injectable Electronics		RAG056636B		\$155,653
93.866	A mitochondrial membrane-spanning ternary complex regulates mitochondrial motility		RAG061315A		\$134,535
93.866	A Non-Invasive Neuromodulation Device for In-Home Treatment of Overactive Bladder	TheraNova LLC	145080		\$15,723
93.866	Advancing Geriatrics Infrastructure & Network Growth (AGING) Initiative - SUPPLEMENT	University of Massachusetts	OSP27336-So // PO #WA01105476		\$38,000
93.866	Age-related decline in interactions between context, cognitive control, and memory		RAG058111A		\$39,697
93.866	Altered ENS Neuroimmune Interactions Disrupt Gastrointestinal Motility in Alzheimers Disease		RAG068394A		\$399,377
93.866	Alzheimer's Clinical Trials Consortium (ACTC)	University of Southern California	118871699		\$3,973
93.866	Alzheimer's Clinical Trials Consortium (ACTC) (U24)	University of Southern California	105761496: PO: 50875751		\$105,223
93.866	Alzheimer's Clinical Trials Consortium (ACTC) (U24)	University of Southern California	105761496: PO: 50875751		\$45,951
93.866	Alzheimer's Disease Genetic Consortium	University Of Pennsylvania	579279; PO# 4491476		\$9,439

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.866	Alzheimer's Disease Genetic Consortium	University Of Pennsylvania	582036; PO 4663771		\$6,785
93.866	Alzheimer's Gut Microbiome Project	Duke University	A034437		\$53,508
93.866	Asian Cohort for Alzheimer's Disease (ACAD R56)	University Of Pennsylvania	580820 PO# 4685220		\$9,921
93.866	Building a Platform for Precision Anesthesia for the Geriatric Surgical Patient		RAG065744A		\$157,973
93.866	Cardiovascular and Cerebrovascular Risk Factors for Mobility Limitation in the Jackson Heart Study		RAG071019A	\$42,922	\$125,451
93.866	Center for Advancing Socioeconomic and Economic Study of Alzheimers Disease and Related Dementias (CoASES-ADRD)	University of Southern California	REF: 139549668 PO: 10943722		\$20,873
93.866	Center for Advancing Socioeconomic and Economic Study of Alzheimers Disease and Related Dementias (CoASES-ADRD)	University of Southern California	SCON-00002087		\$4,284
93.866	Cerebrovascular Reserve Imaging with Simultaneous PET/MRI Using Arterial Spin Labeling and Deep Learning		REB025220A		\$167,868
93.866	Characterizing the assembly and age-related decline of neural circuits in Drosophila by single-cell profiling		KAG062746A		\$101,691
93.866	Columbia University Science of Behavior Change Resource and Coordinating Center	Columbia University	1(GG015971-01)		\$149,847
93.866	Constructing, Validating, and Investigating the Added Explanatory Power of Life-Course Health Histories - US	Ohio State University	60079501		\$25,583
93.866	Cortical Hemodynamics and Oxygenation During Sleep and Cognition: Window to Cognitive Impairment and Neurodegeneration in Aging		KAG053465A		\$182,501
93.866	COVID-19 - Presence and Neuropathological Consequences of CNS Covid-19 in Consecutive Autopsies During the Worldwide Pandemic	Banner Health	LMS 0435-06-116889		\$76,114
93.866	Defining modifiers and mechanisms of RAN translation		RAG064690A		\$523,102
93.866	Determinants of age-induced hearing loss and reversal strategies	University of Nevada	UNR-17-46		\$236,997
93.866	Determinants of Elderly Health: The Role of Place-Based Factors	Massachusetts Institute of Technology	S5226, PO#539924		\$66,812
93.866	Determining the Role of TCAB1 in Shaping Telomerase Function		RAG056575A		\$499,347
93.866	Development of a cost-effective and neurobiologically valid VR assessment tool for early detection of AD		RAG073973A		\$8,803
93.866	Diagnosis and risk factors of hippocampal sclerosis of aging; a common Alzheimer's mimic in the oldest old	University of California, Irvine	2021-1458		\$37,369
93.866	Dietary Modulation of Neuroinflammation in Age-Related Memory Disorders	Columbia University	GG014813 SAPO G1325		\$59,375
93.866	Dietary Modulation of Neuroinflammation in Age-Related Memory Disorders	Columbia University	GG014813 SAPO G14023		\$64,909
93.866	Discovery of protein aggregates during vertebrate aging and neurodegeneration		RAG057334A		\$958,573
93.866	Disease, Disability and Death in an Aging Workforce		RAG026291E	\$395,699	\$640,689
93.866	Disruption of neuronal signaling in Alzheimers disease and rescue by manipulating the innate immune receptor PIRB		FAG069342A		\$21,422
93.866	Drug Benefit Design and Adherence Disparities in Older Adults	Kaiser Permanente	RNG210274-04		\$2,197
93.866	Effects of attention and goal-state lapses on memory in healthy and pathological aging		RAG065255A		\$308,553
93.866	Effects of Western and Mediterranean Diets on Metabolic and Neuropathologic Risk Factors for Alzheimer's Disease in Nonhuman Primates	Wake Forest University	WFUHS 114989		\$133,347
93.866	Empower treatment effects evaluation of randomized clinical trials for elderly patients with integrated real-world data	North Carolina State University	2019-3095-02		\$16,055
93.866	Evaluating the Effectiveness of an Online Small-Group Self-Management Workshop for Rural Caregivers of Individuals with Alzheimer's Disease and Related	University of California, San Francisco	109878c		\$39,279
93.866	Evolutionary Conserved Mechanisms of Neuronal Degeneration and Regeneration		RAG062948A		\$199,562
93.866	Forming science-industry partnerships to link everyday behaviors to well-being		RAG053252A	-\$8,251	\$32,324
93.866	High-Resolution Imaging of Hippocampal Mechanisms in Age-Related Memory Decline		RAG048076A		\$21,515
93.866	Identification of intrinsic and extrinsic regulators of TDP43 splicing function		RAG070619A		\$42,478
93.866	Identifying the Genetic Etiology of Neuropathology for Alzheimer Disease and Related Dementias	University of Miami	OS00000574; PO# SPC-001127		\$284,303
93.866	Imaging the metabolic and phagocytic landscape of microglia in Alzheimer's disease		RAG071791A		\$27,333
93.866	Impact of microbiota-dependent molecules on mammalian host health and longevity		FAG062119A		\$63,009
93.866	Improving Medical Decision Making for Older Patients with End Stage Renal Disease	Boston Medical Center	1196192-100-GHEYF		\$48,847
93.866	Improving Medical Decision Making for Older Patients with End Stage Renal Disease	Boston Medical Center	7657 Activity # 0718401		\$47,731
93.866	Influence of Age on CD4 T Memory Cells	Palo Alto Veterans Institute for Research	GOR0007-01		\$14,870
93.866	Influence of genetic risk factors on biomarkers and cognitive decline in preclinical AD		KAG051718B		\$11,357
93.866	Innate immune signaling at the synapse in development and pathological Alzheimer's disease		RAG065206A		\$478,179
93.866	Innovating high-resolution novel imaging approaches to elucidate mechanisms of prion-like spreading of neurodegenerative disease		RAG064051B		\$436,639
93.866	Innovative technologies for active surveillance of older adults with low-risk skin cancer		RAG066980A		\$308,748
93.866	Insulin Resistance and Accelerated Cognitive Aging		RAG050345A		\$6,579
93.866	Insulin Resistance and Accelerated Cognitive Aging		RAG050345A	\$196,900	\$518,343
93.866	Interactions between goals, attention, and memory in younger and older adults		FAG059341A		\$61,810
93.866	INTERmittent pneumatic ComprESSION for Disability rEversal in PAD: the INTERCEDE Trial	Northwestern University	60050890 STAN / R01 AG057693		\$16,037
93.866	Investigating whole-body innate immune activation in Alzheimer's disease using PET imaging and immune profiling		KAG070105A		\$43,878
93.866	Iron as an Imaging Biomarker for Inflammation in AD		RAG061120A		\$712,059
93.866	Leveraging Glycomics to Characterize a Molecular Signature of Alzheimer's Disease	North Carolina State University	2019-1296-01		\$10,333
93.866	Link between epigenetic modifiers and fat metabolism for healthy aging		RAG054201A	\$75,294	\$180,155
93.866	Long term fracture risk and change in peripheral bone in the oldest old men:The MrOS study	California Pacific Medical Center Research Institute	280201024-S277		\$85,463
93.866	Long term fracture risk and change in peripheral bone in the oldest old men:The MrOS study	California Pacific Medical Center Research Institute	280201024-S277 28000008030		\$129,087
93.866	Long-Term Fracture Risk in Older Men: the MrOS Study	California Pacific Medical Center Research Institute	280201023-S259, PO28000007110		-\$112
93.866	Management of Hypertension among Persons with and without Dementia in Long-Term Care		RAG062568A	\$228,311	\$654,702
93.866	Mapping Molecular and Phenotypic Interactions in Alzheimers Disease		RAG066490A	\$31,488	\$720,585
93.866	Mechanisms of Age-Related Microglial Impairment and Rejuvenation in Alzheimer's Disease		FAG060638A		\$37,544
93.866	Mechanisms of Aging in C. Elegans		RAG025941C		\$53,984
93.866	Mechanisms of Skeletal Stem Cell Aging		RAG049958B		\$307,523
93.866	Microglial lipid droplets in Alzheimers disease		RAG064928A	\$2,094	\$699,034
93.866	Microsimulation to Improve the Health and Wellbeing of Older Populations	University of Southern California	135921711 PO 10922272		\$2,485
93.866	MIRIAD - Multiplexed Imaging of Resilience In Alzheimers Disease		RAG057915A	\$58,072	\$622,472
93.866	Mobility in older hemodialysis patients		KAG057813B		\$138,352
93.866	Molecular Phenotyping in Alzheimer's Disease		RAG053959A	\$458,247	\$834,377
93.866	Molecular Regulation Of Stem Cell Aging	Baylor College of Medicine	7000000497		\$228,342
93.866	Molecular Regulation Of Stem Cell Aging		PAG036695C	\$1,058,926	\$1,778,968
93.866	Molecular signature of parabiosis		RAG072255A		\$69,464
93.866	Multi-dimensional network framework for AD detection and progression		RAG064263A		\$183,832
93.866	Multi-omic functional assessment of novel AD variants using high-throughput and single-cell technologies		UAG072573A		\$8,099



**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.866	NACC	University Of Washington	UWSC8882-BFO32896		\$48,632
93.866	Neuropathologic substrates for motor and cognitive impairment in three existing cohort studies of Alzheimer's disease and related dementias		UAG057707A	\$516,308	\$776,074
93.866	Neuroprotective Treatment Trial Planning in REM Sleep Behavior Disorder	Washington University in St. Louis	WU-20-177; PO 2941356H		\$17,739
93.866	Next Generation Translational Proteomics for Alzheimers and Related Dementias	University Of Washington	UWSC11808; BPO 48322		\$924,263
93.866	Non-REM (NREM) on synapse plasticity and beta amyloid (A) accumulation in mice: impact on aging and Alzheimer's		KAG061230A		\$70,153
93.866	Notch Signaling and Satellite Cell Activation		RAG023806E		\$114,078
93.866	Novel Exosome Biomarkers Of Iron Pathology In Ad		RAG072675A		\$45,255
93.866	Open Drug Discovery Center for Alzheimer's Disease	Emory University	A377294		\$134,983
93.866	Origin of latent hematopoietic stem cells in the aged bone marrow		RAG061487A		\$47,035
93.866	Origins of Genome Instability in Progeria		RAG064344A		\$278,469
93.866	Osteoporotic Fractures in Men (Mr. Os) Palo Alto		UAG042143B	-\$252	
93.866	Palliative care needs and outcomes for dementia patients.		RAG062239A		\$769,702
93.866	Prazosin for Disruptive Agitation in AD (PEACE-AD) Trial	University of California, San Diego	87750190; PO #S9002309		\$578
93.866	Prevalence and Prognosis of Blood Pressure Medication Deintensification among Older VA nursing Home Residents	Northern California Institute for Research and Education	PER2133-01		\$763
93.866	Prevalence, Etiology, and Clinical Implications of Low Count Monoclonal B-cell Lymphocytosis (MBL)	Mayo Clinic	STA 244577-03/67487283		\$51,640
93.866	Prevalence, Etiology, and Clinical Implications of Low Count Monoclonal B-cell Lymphocytosis (MBL)	Mayo Clinic	STA-244577-04/PO #68137001		\$16,101
93.866	Probing Alzheimer synaptopathy in neurons derived from engineered human iPS cells		RAG048131B		\$758,292
93.866	Probing Alzheimer synaptopathy using genetically engineered human neurons derived from iPS cells		RAG048131A	-\$474	
93.866	Proteostasis in Aging and Neurodegenerative Disease	Northwestern University	60057525 STAN		\$61,453
93.866	Proteostasis in Aging and Neurodegenerative Disease (Core B)	Northwestern University	60052294 STAN		\$63,842
93.866	Proteostasis in Aging and Neurodegenerative Disease (Project 1)	Northwestern University	60052293 STAN		\$352,942
93.866	Proteostasis in the aging brain		RAG056290A		\$635,559
93.866	Public Insurance Design and Health at Older Ages		KAG059843A		\$125,702
93.866	Quantitative assessment of early structural and functional changes in aging skeletal muscle		KAG071735A		\$20,388
93.866	RCT of the Effectiveness of Stepped-Care Sleep Therapy In General Practice (RESTING)		RAG057500A		\$508,064
93.866	Regulation of cholesterol by y-secretase and ApoE: Implications for AD pathogenesis and synaptic function		RAG070919A		\$80,147
93.866	Regulation of eicosanoid signaling lipids to improve skeletal muscle function and increase healthspan during aging		RAG069858A		\$593,877
93.866	Regulation of immune cell metabolism in aging and Alzheimer's disease: role of the kynurenine pathway		RAG058047A		\$639,339
93.866	Regulation of Muscle Stem Cell Fate		RAG020961C	-\$6,067	
93.866	Reprogramming myeloid cell metabolism to prevent cognitive aging and Alzheimers disease		RAG070839A		\$411,441
93.866	Resolving selective vulnerability and disease progression in human Alzheimer's brain via single-cell RNA-seq		RAG059848B		\$186,667
93.866	Reversing Skeletal Aging by Restoring Functional Skeletal Stem Cell Diversity		KAG066693A		\$51,413
93.866	Role of beta-adrenergic receptors in modulation of cognition and central and peripheral immune systems in Alzheimer's disease		RAG054533A		\$426,280
93.866	Short Courses in Neuroeconomics and Social Neuroscience	Duke University	309-0091		\$20,800
93.866	Simulation framework of exoskeleton gait assistance for older adults with knee osteoarthritis		KAG065524A		\$104,441
93.866	Single-cell analysis of alterations in signaling dynamics that impair cellular proliferation during aging		FAG060634A		\$134
93.866	Socioemotional Functioning In Adulthood And Old Age		RAG008816E		-\$1,099
93.866	Socioemotional Functioning In Adulthood And Old Age		RAG008816F		-\$3,140
93.866	Socioemotional Functioning In Adulthood And Old Age		RAG008816G		\$531,692
93.866	Stanford Aging & Ethnogeriatrics Transdisciplinary Collaborative Center (SAGE)		PAG059307A	\$75,256	\$858,975
93.866	Stanford Alzheimer's Disease Research Center		PAG066515A	\$71,788	\$2,894,691
93.866	Stanford Training Program in Aging Research		TAG047126B		\$293,498
93.866	Statins and Dementia Risk: A Novel Quasi-Experimental Approach to Identify Causal Effects	Columbia University	2(GG014281-01);PO G13966		\$54,858
93.866	Statistical and computational methods for integrative analysis of Alzheimer's Disease genetics		RAG066206A		\$605,600
93.866	T cells in the aging brain		RAG071711A		\$88,390
93.866	Targeting CD22 to Restore Brain Homeostasis in Alzheimer's Disease		RAG064897B	\$66,329	\$793,184
93.866	Targeting Senescence pathways in Alzheimer's disease		RAG059712A		\$417,854
93.866	Technology-Enabled Therapy for Elders with Insomnia and Comorbid Mild Cognitive Impairment	Environment and Health Group, Inc.	Grant# 1R43AG058334-01A1		-\$6,478
93.866	Tfh dysfunction in HIV and Aging	University of Miami	OS00000393; PO# SPC-001712		\$2,361
93.866	The Contribution of T cells to the Pathogenesis of Atherosclerosis in Older Adults		RAG060182A		-\$9
93.866	The Cosmos/Vue Smart Eyeglass -HAM System Phase IIB	Gen-9, Inc.	SPO# 127056		\$176,592
93.866	The impact of early medial temporal lobe Tau in human cognitive aging		RAG058859A		\$161,031
93.866	The Impact Of Treatment Choice On Long-Term Outcomes In Older Adults With Primary Hyperparathyroidism		RAG060097B		\$106,990
93.866	The influence of multi-domain cognitive training on large-scale structural and functional brain networks in MCI		KAG050759A		\$25,569
93.866	The long-term health effects of the New Deal: An 80 year follow-up of 4 cohorts		RAG059791A	\$204,261	\$613,919
93.866	The Phenotypic Landscape of Cognitive Decline as Revealed by Next-Generation Multiplexed Ion Beam Imaging		RAG056287A	\$12,686	\$299,847
93.866	The role of aging in mitochondrial response to exercise training assessed by noninvasive 31P Magnetic Resonance Spectroscopy.	Pennington Biomedical Research Center	AG069476-SU01		\$21,379
93.866	The Role of Gamma-Secretase in Human Neuronal Physiology		FAG064819A		\$35,242
93.866	The role of TREM1 signaling in the development of Alzheimer's disease		RAG053001A		\$362,861
93.866	The Stanford Extreme Phenotypes in Alzheimer's Disease (StEP AD) Cohort		RAG060747A	\$120,744	\$456,058
93.866	Ultralong-term single-molecule imaging of amyloid precursor protein (APP) processing in Alzheimer's disease		KAG065516A		\$96,163
93.866	Uncoupling Age- Versus Cognitive-Related Cellular Senescence in Alzheimer's Disease		RAG068279A		\$294,234
93.866	Understanding Long-term Mortality Dynamics and Improving Old-age Mortality Forecasts		RAG061639A		\$143,642
93.866	Use of prescription opioids following surgery and associated adverse patient outcomes in older adults	Harvard University	153374.5119149.0005		\$60,176
93.866	VCAM1 in brain endothelial cell activation in aging and Alzheimer's disease		FAG067652A		\$61,312
93.866	Volunteering as an Avenue for Improving Views of Aging		FAG058373A		\$60,009
93.866	Wake Forest Alzheimer's Disease Core Center	Wake Forest University	185-101720-441341		\$12,775
93.866	Wisconsin Alzheimer's Disease Research Center	University of Wisconsin-Madison	0000000550		\$49,448
93.866	Wisconsin Alzheimer's Disease Research Center	University of Wisconsin-Madison	0000001408		\$12,963

STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM  
YEAR ENDED AUGUST 31, 2021

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.867	IRX3 Inflammatory Gene Transcription in the Retina		REY030151A	\$62,012	\$254,373
93.867	Development and Characterization of Silicone Oil-Induced Reversible Ocular Hypertension Glaucoma Model		REY031063A	\$125,039	\$180,299
93.867	Development and regeneration of retinal ganglion cells in the vertebrate retina		KEY031403A		\$125,495
93.867	172929_Mahajan_Proteomic Biomarkers of Eye Disease		REY031952A	\$66,701	\$349,990
93.867	192788 - R01EY032669 - Eye-Motion		REY032669A		\$57,616
93.867	Activity-Dependent Mechanisms of Memory Consolidation		REY031972A	\$60,561	\$550,389
93.867	Activity-Dependent Tagging of Cerebellar Neurons for Studying Signal Processing and Learning		REY031639A		\$157,975
93.867	Afferent and Efferent Visual Systems During Abnormal Vision Development		REY029307A		\$441,370
93.867	Age-related Changes in Human Retinal Microvasculature	Icahn School of Medicine at Mount Sinai	0255-3021-4609		\$42,553
93.867	Assessing Photoreceptor Structure and Function in Normal and Diseased Retinae	Medical College of Wisconsin	AW851955		\$38,960
93.867	Axially-resolved Spectroscopic Ophthalmic Imaging		REY025231B	\$38,622	\$84,180
93.867	Capacity limits in the neural circuitry of visual word recognition		KEY029366B		\$28,766
93.867	Characterization of corneal stromal stem cells encapsulated within bioorthogonally crosslinked collagen gels for delivery to the ocular surface		FEY030731A		\$44,107
93.867	Clinical and Genetic Analysis of Retinopathy of Prematurity	Oregon Health & Science University	1016626_STANFORD		\$44,978
93.867	Developing Novel Neuroprotective Strategies for EAE/Optic Neuritis		REY028106A		\$544,848
93.867	Development of Face Perception: Cross-sectional and Longitudinal Investigations		REY022318C		\$468,248
93.867	Development of Visual Connections		REY002858K		\$258,275
93.867	Disparity Processing in Human Visual Cortex		REY018875D		\$437,044
93.867	Dissecting Neural Circuit Computations in the Peripheral Visual System		REY022638C		\$409,513
93.867	Effects of Hyperbilirubinemia on Visuocortical Functioning in High-Risk Infants	Smith-Kettlewell Eye Research Institute	6012201S		\$203,354
93.867	Elucidating Neuron-Intrinsic Molecular Mechanisms of Optic Nerve Regeneration		REY024932B		-\$18,535
93.867	Elucidating Neuron-Intrinsic Molecular Mechanisms of Optic Nerve Regeneration		REY024932C		\$541,645
93.867	Elucidation of the Molecular Mechanisms of Optineurin in Glaucomatous		FEY029567A		\$63,619
93.867	Function and circuitry of adaptive inhibition in the retina		REY022933C		\$215,121
93.867	Function of MEF2 in Neuroprotection and Neuro-regeneration Following Stroke		REY026766A	-\$339	\$291,289
93.867	Functional-neuroanatomy of high-level visual cortex: a quantitative multimodal approach		REY023915B		\$475,224
93.867	Gene Expression Regulatory Pathways and Retinal Ganglion Cell Neuroprotection		REY032416A		\$268,710
93.867	Goldberg Uoi Molecular Discovery for Optic Nerve Regeneration		UEY027261A	\$130,504	\$134,617
93.867	Imaging Photoreceptor Function	University Of Pennsylvania	579681; PO# 4698915		\$20,218
93.867	Improving rigor and reproducibility in adaptive optics ophthalmoscopy		REY031360A	\$49,910	\$635,881
93.867	In Situ Bioconjugation as a Therapeutic Delivery Modality to Enhance Ocular Wound Healing		KEY028176A		\$260,301
93.867	Increasing the isoplanatic patch in adaptive optics ophthalmoscopy		REY032147A		\$60,969
93.867	Infant Aphakia Treatment Study-Chairman's Grant		UEY013272E		\$785
93.867	Interacting neural mechanisms of selective visual attention and value-based decision-making		KEY029759A		\$115,257
93.867	Interaction of Visual and Oculomotor Signals in Cortex		REY014924D		-\$22,846
93.867	Interaction of Visual and Oculomotor Signals in Cortex		REY014924E		\$376,189
93.867	Ko8-Minimally Invasive Keratoprosthesis		KEY027459B		\$197,473
93.867	Lambert PEDIG	Jaeb Center for Health Research	PEDIG Site #360		\$1,450
93.867	Large-Scale Patterned Electrical Stimulation for Design of Retinal Prostheses		REY021271C		\$233,046
93.867	Long-term Suppressive Valacyclovir Treatment for Herpes Zoster Ophthalmicus	New York University	106171		\$22,743
93.867	Mechanisms regulating the plasticity of postmitotic cells in mammalian retina		REY032585A		\$165,183
93.867	Molecular and functional regeneration of the accessory optic pathway	Johns Hopkins University	2003564303		\$212,627
93.867	Molecular mechanism of Norrin signaling through Frizzled4 and LRP5/6		FEY031947A		\$38,723
93.867	Molecular Pathology of Achromatopsia		REY027335B		\$243,471
93.867	Neural coding of interneuron populations in the retina		REY025087B		\$408,172
93.867	Neuroimaging and histological investigations of human visual cortex development		REY030588A	\$45,717	\$157,609
93.867	Neuroprotection by Modulating ER Stress in Glaucoma		REY023295D		\$353,756
93.867	Pediatric Eye Disease Investigator Group	Jaeb Center for Health Research	PEDIG Site #360		\$25,718
93.867	Personalized predictions for Glaucoma progression using Artificial Intelligence for electronic health records.		KEY032635A		\$52,064
93.867	Phosphoinositide signaling in glaucoma: rescue strategies for Lowe syndrome		REY032159A		\$17,080
93.867	Processing of Thalamocortical Inputs by Intracortical Circuits		REY027087A		\$105,207
93.867	Promoting optic nerve and retinofugal pathway regeneration		REY026100B		\$64,953
93.867	Relating spontaneous activity to electrical stimulation properties of primate retinal ganglion cells		FEY030776A		\$38,846
93.867	Retinal Ganglion Cell Replacement in Optic Neuropathies		UEY029903A	\$1,149,341	\$1,629,608
93.867	Retinal vessel features as a marker of idiopathic intracranial hypertension treatment response: a secondary analysis of the idiopathic intracranial hypertension treatment tria		REY031726A	\$45,766	\$169,137
93.867	Robust AI to develop risk models in retinopathy of prematurity using distributed deep learning	Massachusetts General Hospital	237342 / R21 EY031883		\$6,152
93.867	Role of growth and differentiation factors in retinal ganglion cell development		FEY029137A		\$50,118
93.867	RPE Energy Metabolism and Cell Phenotype		REY025790A		\$432,043
93.867	SPO 124972_Photo voltaic Subretinal Prosthesis with High Pixel Density		REY027786A		\$836,212
93.867	Stanford Vision Research Core		PEY026877A		\$749,959
93.867	Stanford Vision Training Program		TEY027816A		\$196,841
93.867	Structural and functional tests of ganglion cell damage in glaucoma		REY030361A	\$18,159	\$483,653
93.867	The role of primary cilia in glaucoma pathogenesis		REY025295B		\$241,415
93.867	Transcriptional activation for rare disease rescue		FEY032775A		\$14,841
93.867	Unique physiological properties of novel ganglion cell types in primate retina		REY029247A	\$129,348	\$471,091
93.867	Validation and Application of Metabolic Imaging in Glaucoma		REY028287A		-\$106,125
93.867	Validation and Application of Metabolic Imaging in Glaucoma		REY028287A	\$115,418	\$115,418
93.867	VRC: The Role of Perinuclear cAMP in Retinal Ganglion Cell Neuroprotection and Optic Nerve Regeneration		REY031167A		\$271,818
93.874	Robust Statistical Methods to Identify and Use Surrogate Markers in Diabetes	Rand Corporation	SCON-00000164 (9920190021)		\$61,010
93.879	A Mobile Game for Domain Adaptation and Deep Learning in Autism Healthcare		RLM013364A		\$16,264
93.879	Advancing Knowledge Discovery for Postoperative Pain Management		RLM013362A		\$546,629
93.879	Automated data curation to ensure model credibility in the Vascular Model Repository		RLM013120A	\$72,892	\$334,250
93.879	Biomedical Data Science Graduate Training at Stanford (BD2K)		TLM012409A		\$292,419
93.879	Biomedical Informatics Training at Stanford		TLM007033I		\$1,063,204
93.879	Creating an artificial intelligence therapy-to-data feedback loop for child developmental healthcare		RLM013083A		\$588,308
93.879	Deep Curation via an Integrated Whole-Cell Computational Model		RLM013229A	\$110,693	\$452,503

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
93.879	Deep Learning for Pulmonary Embolism Imaging Decision Support: A Multiinstitutional Collaboration		RLM012966A	\$21,975	\$419,527
93.879	From Enrichment to Insights		RLM011369C		\$592,933
93.879	Machine Learning Clinical Order Recommendations for Specialty Consultation Care		RLM013365A		\$251,286
93.879	Novel machine learning and missing data methods for improving estimates of physical activity, sedentary behavior and sleep using accelerometer data		RLM013355A		\$146,029
93.879	The Metadata Powerwash Integrated tools to make biomedical data FAIR		RLM013498A		\$251,288
93.879	Toward improved understanding of sex differences in drug response: developing gene and pathway-based informatics methods to examine sex-differential genetic effects		FLM013053A		\$36,760
93.879	Unifying Templates, Ontologies and Tools to Achieve Effective Annotation of Bioassay Protocols	University of Miami	OS00000253 SPC-001538		\$103,440
93.886	Generalizable Deep Learning Networks for Dual-tracer Amyloid/Tau PET/MRI Imaging of Alzheimer's Disease		KAG068310A		\$18,240
93.889	Western Regional Alliance for Pediatric Emergency Management (WRAP-em)	University of California, San Francisco	116558c		\$10,480
93.989	Celluar, molecular and quantitative imaging analysis of screening-detected lung adenocarcinoma	Vanderbilt University Medical Center	VUMC57212		\$5,280
93.989	Global Health Fellows and Scholars Research Training - Mentoring Fellowship Supplement	University of California, Berkeley	00009518		\$15,766
93.989	Global Health Fellows and Scholars Research Training - Mentoring Fellowship Supplement	University of California, Berkeley	00009518 / BB01006362	\$127,547	\$326,351
93.989	Global Health Fellows and Scholars Research Training - Mentoring Fellowship Supplement	University of California, Berkeley	Sub 0009518 BB01006362		-\$331
93.994	Regional Perinatal Programs of CA	California Department of Public Health	19-10475		\$555,289
93.RD	Women's Health Initiative - Regional Centers 2015-2020		HHSN268201600003C	\$64,935	\$200,795
93.RD	63623872FLZ3002: A Phase 3 Randomized, Double-blind, Placebo-controlled, Multi-center Study to Evaluate the Efficacy and Safety of Pimodivir in Combination With the Standard-of-care Treatment in Adolescent, Adult, and Elderly Non-hospitaliz	Janssen Research & Development, LLC	63623872FLZ3002		\$2,210
93.RD	Biorepository of human induced pluripotent stem cells for cardiovascular diseases		75N92020D00019/75N92020F0001		\$176,125
93.RD	Biorepository of human induced pluripotent stem cells for cardiovascular diseases		75N92020D00019/75N92020F0002		\$727,468
93.RD	Center for Excellence in Influenza Research Surveillance	Emory University	A331606 0000022604		\$153,751
93.RD	Center for Influenza Vaccine Immunology and Development	Icahn School of Medicine at Mount Sinai	0258-A406-4609		-\$1,309
93.RD	Center for Influenza Vaccine Immunology and Development	Icahn School of Medicine at Mount Sinai	0258-A428-4609		\$316,322
93.RD	Characterization of Neoantigens in Virus-Related Malignancies	Leidos Biomedical Research Inc.	17X074F6		\$313,028
93.RD	Clinical Validation and Supply of SRI Biodosimeter	SRI International	21692		\$22,282
93.RD	Collection of Gene Mutations for Laboratory Quality Assurance	Sequoia Foundation	9129-005/CF PT Project		\$4,458
93.RD	Computational Methods for Detection of Unseen Pathologies with Deep Learning Algorithms for Chest X-ray Interpretation	University of North Carolina at Chapel Hill	518778		\$36,000
93.RD	COVID-19 - Advancing a lead broad spectrum antiviral PI-kinase inhibitor to the clinic for enteroviruses and COVID-19		75N93020C00054	\$113,590	\$2,823,741
93.RD	COVID-19 - Analysis of Immune and Organ Systems Responses in Patients with COVID-19	Institute for Systems Biology	2020.0007 P055118		\$199,911
93.RD	COVID-19 - Convalescent Plasma to Limit Coronavirus Associated Complications: A Randomized Double-Blind, Phase 2 Study Comparing the Efficacy and Safety of High-Titer Anti-SARS-CoV-2 Plasma vs. Placebo in Emergency Room Patients	University of Pittsburgh	AWD00002607-2		\$333,825
93.RD	COVID-19 - Medical Imaging and Data Resource Center (MIDRC) for Rapid Response to COVID-19 Pandemic	University of Chicago	AWD101462-D		\$439,417
93.RD	COVID-19 - Pathology and Pathogenesis of Coronavirus Infections in Animal Models		75F40120C00176		\$69,760
93.RD	FLZ 3001: A Phase 3 Randomized, Double-blind, Placebo-controlled, Multi-center Study to Evaluate the Efficacy and Safety of Pimodivir in Combination With the Standard-of-care Treatment in Adolescent, Adult, and Elderly Non-hospitalized Subj	Janssen Research & Development, LLC	63623872FLZ3001		\$4,401
93.RD	Fragile X Registry and Database	National Fragile X Foundation	FXCRC (2)		\$8,841
93.RD	Leidos CEDAR Template	Leidos Biomedical Research Inc.	17X074 TO# F5		\$340,163
93.RD	MACRA Episode Groups and Resource Use Measures	Acumen, LLC.	MIDS-19F0004-T0005		\$4,711
93.RD	MACRA Episode Groups and Resource Use Measures	Acumen, LLC.	MIDS-19F0004-T0005-1		\$115,844
93.RD	MAT Expansion Project	Health Management Associates	102150		\$92,930
93.RD	Nanoparticles for radiation oncology	Intelligent Fiber Optic Systems Corporation	Prime: 75N91019C00051		\$23,503
93.RD	National Sleep Research Resource (NSRR)	Brigham and Women's Hospital	122255		\$41,956
93.RD	Neuropsychological Assessment System for Cancer Patients	Creare Inc	S677 PO 106415		\$75,568
93.RD	Pediatric Trials Network	Duke University	48/232379/6941 ANA01/STN99		\$8,876
93.RD	Pumps for Kids, Infants, and Neonates (PumpKIN) Clinical Trial	New England Research Institute, Inc.	Task Order 6		\$74,018
93.RD	Quality Reporting Program Support for the Long-Term Care Hospital, Inpatient Rehabilitation Facility, Skilled Nursing Facility QRP and Nursing Home Compare	Acumen, LLC.	MIDS-19F0003-T0010		\$13,388
93.RD	ReCePI Cerus Study	Cerus Corporation	Work Order #1 PO 206124		\$138,131
93.RD	Sequelae and immunopathology of Ebola virus infections		HHSF223201610018C/CLIN20001		\$990,493
93.RD	COVID-19 - Sequelae and immunopathology of Ebola virus infections		HHSF223201610018C/CLIN20001		\$161,756
93.RD	Stanford Human Cancer Models Initiative Center	Leidos Biomedical Research Inc.	19X015Q		\$11,269
93.RD	Surveillance Activities	Acumen, LLC.	MIDS-19F0003-T0010		\$19,329
93.RD	The CBER Biologics Effectiveness and Safety (BEST) Initiative: Conduct Surveillance Activities for Safety and Effectiveness of Biologics	Acumen, LLC.	FDA-20F19003-T0004		\$288,548
93.RD	The Women's Health Initiative (WHI)- Regional Centers		75N92021D00004/TO75N92021F0001		\$901,024
93.RD	TOGETHER: Track Outcomes & Guidance, Enabled Technology for Health & Effective Resources	Medable, Inc.	SPO#133314		\$19,141
93.RD	TrialNet Screening and DPT-1 Follow Up Studies	University of South Florida	PO 261241; 253349		\$287,269
93.RD	Women's Health Initiative - Regional Centers 2015-2020		HHSN268201600003C		-\$24,513
<b>Department of Homeland Security</b>					<b>\$64,071</b>
97.061	Effects of Organizational Dynamics on Terrorist Threats and Counterterrorism Responses	University of Nebraska Omaha	44-0108-1001-409		\$64,504
97.RD	Development of New Process for Growing SrI2 Crystals Having a Predetermined Shape	CapeSym Inc	CS-19-B-00001		-\$433
<b>Department Of Justice</b>					<b>\$270,982</b>
16.560	A Confirmatory Test for Sperm in Sexual Assault Samples using a Microfluidic-Integrated Cell Phone Imaging System		2017-NE-BX-0004		\$8,500
16.560	Bio-inspired Material-integrated Magnetic Beads for Differential Extraction of Sperm in Forensic Applications		2019-NE-BX-0003		\$262,482
<b>Department of State</b>					<b>\$441,917</b>
19.019	Estimating the Prevalence of Human Trafficking in Brazilian Agriculture	University of Georgia Research Foundation, Inc.	SUB00002413		\$58,720

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
19.040	Strengthening the Capacity of African Civil Society to Counter Chinese Propaganda and Disinformation	Institute for War & Peace Reporting US	133-20-15-HU		\$160,048
19.703	Citizen Trust and Evidence-Based Police Accountability and Professionalization in Mexico		SINLEC16CA2003		\$223,149
<b>Department of the Interior</b>					<b>\$203,733</b>
15.232	Forest management and socio-economic implications of prescribed burning by Yurok and Karuk Indians		L17AC00214		\$2,188
15.805	The Use of NMR Logging Measurements to Estimate Hydraulic Conductivity in Glacial Aquifers	University of California Office of the President	SA17-3744-01		\$64,471
15.807	Detection of ground motion spatial correlation nonstationarities using network analysis		G20AP00019		\$38,220
15.807	Earthquake Monitoring in an Urban Setting Through Deep-Learning-Based Noise Suppression and Back-Projection: Case Study for the Long Beach Dense Array		G20AP00015		\$6,142
15.808	51668: Grove - Stanford-USGS: Micro-Isotopic Analytical Center (SUMAC)		G21AM10211-00		\$9,735
15.808	51668_GROVE_PROG INCOME_SHRIMP		G16AC00006		\$39,400
15.808	Law of the Sea - Limits of the Extended Continental Shelf		G18AC00209		\$278
15.808	Wetland fluxnet synthesis for methane: understanding and predicting methane fluxes at daily to interannual timescales		G19AC00362		\$43,299
<b>Department of Transportation</b>					<b>\$2,686,139</b>
20.108	Air Navigation Based on Global Navigation Satellite Systems		693KA8-19-N-00015		\$1,873,335
20.109	Jet Noise Modeling to Support Low Noise Supersonic Aircraft Technology Development		13-C-AJFE-SU amendment24		\$166,434
20.109	Open-source data collection, analysis and mitigation of aviation environmental impacts		13-C-AJFE-SU Amendment22		\$245,166
20.109	Shock Tube and Flow Reactor Studies of the Kinetics of Jet Fuels: Stanford University Team		13-C-AJFE-SU/GR06642		\$307,362
20.109	TASK 186: Mitigate Threats through Space Environment Modeling/Prediction Including Micrometeoroid and Orbital Debris(MMOD) Detection/Avoidance		15-C-CST-SU-010		\$68,040
20.614	Use of Discharge Instructions to Increase Seat Belt Use	American College of Emergency Physicians	ACEP Account Code 7-08-405614		\$25,802
<b>National Aeronautics and Space Administration</b>					<b>\$17,095,235</b>
43.001	142144 Lapotre-NASA-Eolian:The Effects of Atmospheric Density on Eolian Ripple Formation and Morphology		80NSSC20K0145		\$108,586
43.001	158019 NASA Columbia - Gentine - Understanding memory effects and climatic drivers of net primary productivity and respiration enabled by SMAP vegetation optical depth	Columbia University	1(GG017016)/PO-SAPO G15119		\$7,349
43.001	159086 NASA Testing production of long-duration solar flare gamma-rays by particles accelerated at the CME-shock		80NSSC19K1516		\$38,917
43.001	168583 NASA TWSC Arrigo Research Coordination Network for Ocean Worlds		80NSSC20K1258		\$46,080
43.001	178212 Holtzman NASA FINESST - Unraveling the role of plant hydraulic traits in transpiration using microwave radiometry		80NSSC20K1620		\$43,000
43.001	Advanced Multiplexed Transition-Edge Sensor Microcalorimeter Arrays		NNX14AN95G		-\$1,512
43.001	Advancing Focal Plane TRL for LiteBIRD and other Next Generation CMB Space Missions	University of California, Berkeley	00009784		\$221,354
43.001	Advancing Time Transfer and Optical Atomic Clocks for Space	Jet Propulsion Laboratory	Sub No. 1583357		\$28,489
43.001	An Easier And More Powerful Way Of Analyzing Fermi/Lat Data: Fermipy		80NSSC18K1714		\$11,681
43.001	Assessing the habitability of post-impact hydrothermal systems using the Chicxulub crater as a natural laboratory		80NSSC20K1528	\$43,704	\$75,641
43.001	Athena WFI	Pennsylvania State University	5584-LSJU-NASA-B07G	\$63,414	\$198,147
43.001	Award Full Name(Value Required)		80NSSC18K1713		\$12,268
43.001	Biosynthesis of 3-Methylhopanoids by Purple Non-Sulfur Anoxygenic Phototrophs		80NSSC17M0070		\$47,356
43.001	Building a Legacy Progenitor-Selected Cluster Sample at z>1	Smithsonian Astrophysical Observatory	GO1-22131B		\$15,320
43.001	Collaborative Research to Evaluate the Effects of Injection Strategies on Mixing in ARC-Heaters at the AMES Research Center		80NSSC19M0203		\$155,929
43.001	Consequences of Flows and Fields in the Interior and Exterior of the Sun (COFFIES)		80NSSC20K0602	\$315,981	\$596,082
43.001	Deep X-ray Observations of 3 Exceptional High-z Clusters of Galaxies	Smithsonian Astrophysical Observatory	GO6-17112B		-\$193
43.001	Development of integrated readout electronics for next generation X-ray CCDs		80NSSC19K0499	\$192,224	\$407,171
43.001	Diagnosing, Addressing and Forecasting CIB Contamination in Spectral Measurements of the Sunyaev Zel'dovich Effect	Rochester Institute of Technology	32447-02		\$10,670
43.001	Electric-Current Neutralization in Solar Active Regions and its Relation to Magnetic Shear and Eruptive Activity		80NSSC18K0670	\$54,644	\$125,313
43.001	Exoplanets Unveiled: Formation, Evolution and Prospects for Life	University of California, Berkeley	00008748 / NNX15AD95		\$42,890
43.001	Extending the Coronal Global Evolutionary Model	University of California, Berkeley	00010119		\$16,589
43.001	Follow Up Gravitational Wave Candidates With The Fermi Lat During O3		80NSSC18K1715		\$10,099
43.001	Frequency-Dependent Helioseismic Analysis on Solar Meridional Flow, Center-to-Limb Effect, and Sunspots		80NSSC19K0857		\$90,563
43.001	Functional analysis of abundant candidate microbial phyla in geothermal springs	University of Nevada, Las Vegas	GR07011		\$158,911
43.001	Gravitational millilensing as a tool for studying the microarcsec-scale structure in PKS1413+135	Smithsonian Astrophysical Observatory	DD9-20112X		\$16,077
43.001	Helioseismic and Magnetoacoustic Waves in and above Sunspots: Origin, Up-Channeling, and Reflection		80NSSC18K0668	\$10,686	\$126,516
43.001	High Resolution Vegetation Water Content and Tree Mortality Estimation using Synthetic Aperture Radar		80NSSC18K1332		\$33,750
43.001	Identifying the biosynthetic pathway of brGDGT biomarker lipids		80NSSC20K0616		\$79,564
43.001	Impacts of Severity and Legacy of Droughts on Carbon exchange of the Amazon tropical forests	Jet Propulsion Laboratory	CREI 1571092		\$466
43.001	Improving Linkages Between Earth Observations and Ecosystem Service Models with Essential Biodiversity Variables		80NSSC18K0434		\$201,701
43.001	Improving Magnetic Field Boundary Conditions for Solar Wind Forecast Models	University of Colorado, Boulder	1557399 PO# 100116383		-\$70
43.001	Improving X-ray Polarization Sensitivity and an IXPE Application to the physics of Blazar Jets		80NSSC19K1407		\$36,609
43.001	Integration of InSAR with Airborne Geophysical Data for the Development of Groundwater Models		80NSSC19K1248	\$20,372	\$237,620
43.001	Intra-Binary Shock Emission in the Black Widow Population		80NSSC17K0024		\$48,198
43.001	Intrepid Planetary Mission Concept	Arizona State University	ASUB00000479		\$2,564
43.001	Investigating mechanisms for producing metallic Fe enrichments and magnetic anomalies within planetary crustal materials	Washington University in St. Louis	WU-20-515 / PO 2941696H		\$36,308
43.001	Joint inversion of seismicity and geodetic observations for imatin volcanic intrusions		NNX16AN08G		\$13,573
43.001	Joint radar and model investigations of Greenland basal water conditions		NNX16AJ95G		\$92,858
43.001	Kepler-K2 AGN Light Curves: A Unique Tool for Accretion Physics and the Detection of Binary AGN	Smithsonian Astrophysical Observatory	PF7-180168		\$3,825
43.001	Laboratory measurement of opacities and pressure-induced line broadening parameters at exoplanetary atmospheric conditions		80NSSC20K0258	\$7,061	\$137,164
43.001	Linking Active Regions and Solar Cycles to Understand How Variable Flows in the Solar Interior Affect Surface Magnetic Field Evolution		80NSSC20K0184	\$113,986	\$192,736

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

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43.001	Looking for (Cluster) Relaxation? Try the Spa	Smithsonian Astrophysical Observatory	AR9-20012X		\$1,783
43.001	Measuring magnetar distance from the dust echo of a bright burst	Smithsonian Astrophysical Observatory	GO9-20052X		\$1,507
43.001	Modeling of Cosmic-Ray Propagation and Galactic Diffuse Gamma-Ray Emission in Support of Current and Future NASA Missions, Phase 3		NNX17AB48G		\$386,383
43.001	Modeling the Universe Interfacing Numerical Simulations, Theory, Statistical Methods, and Observations	University of Arizona	532505		\$19,528
43.001	NASA Food Security and Agriculture Consortium (FSAC)	University of Maryland	54308-Z6059203		\$207,590
43.001	Observing the Rarest Clusters at $z > 1$ with Chandra	Smithsonian Astrophysical Observatory	GO0-21124B		\$53,141
43.001	Oceans Across Space and Time	Georgia Institute of Technology	AWD-102551-G6/RK617-G6		\$136,601
43.001	On-Line Real-Time Fermi-Lat Grb Catalog: A Legacy For Fermi		80NSSC19K1517		\$12,124
43.001	Optical Counterparts for LAT Pulsars and UNIdentified Sources		80NSSC17K0502		\$10,281
43.001	Optical Counterparts for Top LAT MSP Candidates		80NSSC18K1712		\$12,184
43.001	Optimized Cluster Cosmology with the Planck Satellite		80NSSC20K0880		\$147,169
43.001	Persistent Scatterer InSAR: Maximizing Coverage and Enabling Application to Groundwater Management		NNX16AK60G		\$87,873
43.001	Persistent Scatterer InSAR: Maximizing Coverage and Enabling Applications Through User-friendly Data Products		80NSSC19K1485		\$28,679
43.001	Predicting fire risk and estimating carbon emissions in tropical peatlands using SMAP soil moisture		80NSSC18K1341		\$42,500
43.001	Probing the central engines of luminous active galaxies with far-infrared polarimetry ID: 07_0032	Universities Space Research Association	SOFIA Grant 07-0032		\$165,158
43.001	Providing Enabling & Enhancing Technologies for a Demonstration Model of the Athena X-IFU		80NSSC19K1600		\$95,743
43.001	Quantifying the Rate of Nearby Dual AGN	Smithsonian Astrophysical Observatory	GO1-22096B		\$9,338
43.001	Quantum-Limited Amplifiers for Multiplexed TES and MKID Arrays		NNX13AQ98G		-\$6,889
43.001	Quasi-Periodic Oscillations Around Supermassive Black Holes		80NSSC20K0591		\$5,405
43.001	Quiescent Solar Gamma-Ray Emission: Probing Cosmic Rays And Solar Environment		80NSSC20K1558		\$28,072
43.001	Radiation Hard and High Temperature Tolerant Thermal Imagers	Jet Propulsion Laboratory	CREI 1631670		\$72,388
43.001	Radio Science Advisor to Planetary Data System	University of California, Los Angeles	2090GTB148		\$27,175
43.001	Real World, Real Science: Using NASA Data to Explore Weather and Climate	Gulf of Maine Research Institute	30-NASARS-15-Stanford		\$65,271
43.001	Real World, Real Science: Using NASA Data to Explore Weather and Climate	Gulf of Maine Research Institute	30-NASARS-21 S		\$96,373
43.001	Reliving The Past: Experimental Evolution of Major Transitions In The History of Life	Georgia Institute of Technology	RH809-G4		\$22,223
43.001	Simulating active longitudes by coupling magnetograms with a nonlinearMHD tachocline model: a data assimilation approach	University Corporation of Atmospheric Research	SUBAWD002075		\$29,628
43.001	Simulating Energy Buildup and Eruptions in Solar Active Regions	University of Michigan	SUBK00008007/PO# 3005157018		\$9,209
43.001	Single-Source, Astro-Stationary Orbits for Astrophysical Observations		80NSSC20K1245		\$28,826
43.001	Slow Slip Events in Cascadia: Observation and Hazard Analysis Derived from InSAR, With GPS and Seismic Data Constraints		NNX17AE03G		\$59,180
43.001	Solar Storms and Terrestrial Impacts Center (SOLSTICE)	University of Michigan	PO3005977491.SUBK00011258		\$49,076
43.001	Study of Global-Scale Surface Flows and Migration of Polar Crown Filaments of the Sun in Past 10 Solar Cycles in Comparison with Helioseismology Results in 2 Recent Cycles	New Jersey Institute of Technology	(NP) 997277		\$28,223
43.001	Studying the Progenitors of Our Favorite Clusters at $z > 1$	Smithsonian Astrophysical Observatory	GO9-20117B		\$12,070
43.001	Studying the Progenitors of Our Favorite Clusters at $z > 1$		80NSSC21K0759		\$28,816
43.001	The Airborne InSAR and PolSAR Permafrost Dynamics Observatory	University of Colorado, Boulder	1554878.PO 1000792321		\$83,619
43.001	The Answer is Blowing in the Wind	Smithsonian Astrophysical Observatory	GO8-19050A		\$107,374
43.001	The Gemini Planet Imager Exoplanet Survey: Completion and Analysis		80NSSC17K0535	\$39,327	\$117,227
43.001	The Hard X-ray Spectrum and Variability of I Zw 1: The Ideal Laboratory for Accretion Physics & Jet Launching		80NSSC20K0838		\$32,212
43.001	The Hard X-ray Spectrum and Variability of I Zw 1: The Ideal Laboratory for Accretion Physics & Jet Launching		80NSSC20K0041		\$69,431
43.001	The M-dwarf Opportunity: Characterizing Nearby M-dwarf Habitable Zone Planets	Johns Hopkins University Applied Physics Laboratory	169752		\$21,231
43.001	Toward Fast, Low-Noise, Radiation-Tolerant X-ray Imaging Arrays for Lynx: Raising Technology Readiness Further	Massachusetts Institute of Technology	S5074 - PO 481322		\$131,339
43.001	Tropical controls on the atmospheric growth rate and implications for carbon-climate feedbacks	Jet Propulsion Laboratory	CREI 1585339		\$12,921
43.001	Understanding the Role of Helicity Flux in Solar Eruptions from Active Regions		80NSSC19K0072	\$30,577	\$268,937
43.001	Unveiling the AGN population in the highest redshift, mature, massive galaxy cluster	Smithsonian Astrophysical Observatory	GO0-21088X		\$28,225
43.001	US contributions towards studies of the Athena WFI instrumental background and transient source populations	Pennsylvania State University	S001536-NASA		\$10,582
43.001	Using earth observations and ecosystem modeling to improve the sustainability of agribusiness and extractive industries in working landscapes		NNX17AG56G		\$154,508
43.001	Using Model-Data Fusion to Determine Plant Hydraulic Traits and Transpiration		80NSSC18K0715		\$11,549
43.001	What is Sourcing Gas Motions in the Core of NGC 1316?	Smithsonian Astrophysical Observatory	GO8-19064X		\$41,307
43.001	Zooming Out: How Regular are Cluster Atmospheres at and Beyond the Virial Radius	California Institute of Technology	S401907		\$2,508
43.002	Development of a Fidelity-Adaptive LES Combustion Model for Predicting Fuel-Sensitivities on Combustion Stabilization and Ignition		NNX15AV04A		\$43,263
43.002	Low-Speed Flight Characteristics and Noise Design Tools for the Integrated Configuration Shaping of Commercial Supersonic Aircraft	University Of Washington	UWSC1500 // BPO 43773		\$97,891
43.002	Safe Aviation Autonomy with Learning-enabled Components in the Loop: from Formal Assurances to Trusted Recovery Methods		80NSSC20M0163	\$174,017	\$734,362
43.002	Scalable Hierarchical CFD Solvers for Future Exascale Architectures		80NSSC18M0152		\$165,450
43.002	Validation of wall models for LES with application to the NASA Common Research Model		80NSSC20M0201		\$391,163
43.002	Validation of wall models for LES with application to the NASA Common Research Model		NNX15AU93A		\$96,551
43.003	Effects of chronic high LET radiation on the human heart	Baylor College of Medicine	7000001223		\$409,066
43.003	Gas Diffusion Electrochemical Cells for CO2 to Acetate Conversion		80NSSC19M0034		\$83,439
43.003	Mechanisms underlying charged particle-induced disruption of CNS function	University of California, Irvine	2015-3277		\$253,421

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
43.003	Using human stem-cell derived vascular, neuronal and cardiac 3D tissues to determine countermeasures for radiation	Baylor College of Medicine	PO# 7000001222		\$72,129
43.007	Exploring Uranus through SCATTER: Sustained ChipSat/CubeSat Activity Through Transmitted Electromagnetic Radiation		80NSSC21K0691		\$73,015
43.007	Microgravity Crystal Growth of Photovoltaic Semiconductor Materials: Controlled Defect Homogeneity in CuInS <sub>2</sub>	Center for the Advancement of Science in Space	GA-2019-0858		\$41,564
43.008	NASA STEM Pathway Activities-Consortium for Education (NSPACE) - Biopolymer Research for In-Situ Capabilities (BRIC)	Oklahoma State University	SPOCS-SU/P1274240		\$2,779
43.009	Networking and Navigation for Spacecraft Swarms		80NSSC18K1673		\$54,389
43.012	137652_Pavone_NASA_Risk-Sensitive Learning and Decision Making for Autonomous Space Robots		80NSSC19K0210	\$86,475	\$198,908
43.012	Advanced Physical Models and Numerical Algorithms to Enable High-Fidelity Aerothermodynamic Simulations of Planetary Entry Vehicles on Emerging Distributed Heterogeneous Computing Architectures		NNX15AU58G		\$75,095
43.012	Advancing Computational Methods for Supersonic Retropropulsion		80NSSC20K1167		\$56,500
43.012	Advancing the State of the Art in the Simulation of Parachute Inflation and Descent Dynamics: Multiscale Modeling, Performance Acceleration, and Validation		80NSSC21K0228		\$124,248
43.012	An Innovative High Fidelity Multidisciplinary Computational Framework for Parachute Inflation Dynamics		NNX17AD02G		\$38,925
43.012	Autonomous Nanosatellite Swarming using Radio Frequency and Optical Navigation		80NSSC18M0058		\$375,290
43.012	Broadband mid-infrared silicon metalenses based on data-driven inverse design for space deployment		80NSSC21K0220	\$25,650	\$41,396
43.012	Center for the Utilization of Biological Engineering in Space	University of California, Berkeley	00009564/PO#BB01347866		\$248,032
43.012	Collaborative Manipulation for Space Exploration and Construction		80NSSC18K1180		\$59,000
43.012	Electrochemical membrane reactors for in-situ resource utilization of wastewater in space		80NSSC20K1207		\$58,600
43.012	Electrodeionization Salt Removal from Water		80NSSC21M0219		\$17,463
43.012	High-Fidelity Combustion Modeling for LOX/Methane In-Space Propulsion Systems		80NSSC20K1171		\$61,500
43.012	Integrated acoustic technology for boil-off control, mass gauging, and structural health monitoring in cryogenic fuel tanks		80NSSC21K0540		\$2,578
43.012	Micro-scale modeling of ablative thermal protection systems during atmospheric entry		80NSSC19K1134		\$55,129
43.012	Nasa Space Technology Research Fellowships (Nstrf) - Fall 2018 Textile-Composite Capacitive Sensors For Proprioceptive Origami-Based Rovers		80NSSC18K1197		\$67,485
43.012	Optimal Impulsive Control of Spacecraft Relative Motion		80NSSC18K1187		\$37,943
43.012	ReachBot: Small Robot for Large Mobile Manipulation Tasks in Martian Cave Environments		80NSSC21K0697		\$64,076
43.012	Robust and Efficient GNC Algorithms for Autonomous Formation Flying using Electric Propulsion		80NSSC18K1176		\$60,608
43.012	Robust Verification Tools for Precision Entry Guidance		80NSSC18K1503		\$33,190
43.012	SelfGuided Beamed Propulsion for Breakthrough Interstellar Missions	Texas Engineering Experiment Station	M2000336		\$102,805
43.012	Space Environmental Electrical Power Subsystem (SEEPS)		80NSSC18K1152		\$51,621
43.012	SPO 152720_NASA Goddard LOC		80NSSC19K1143		\$62,736
43.012	Using Aerodynamic Torque to Desaturate CubeSat Reaction Wheels		NNX16AM78H		\$9,822
43.012	Versatile Inverted-Hand Robotic Design for Mobile Manipulation in Space Environments		80NSSC20K1172		\$59,000
43.RD	Advanced Design tools for Electrosail Propulsion Systems	Particle Matters, Inc.	STTR20NS01		\$59,161
43.RD	Advanced Telescope for High-ENergy Astrophysics		80GSFC21C0005		\$169,662
43.RD	Europa Clipper Geodesy Focus Group co-chair	Jet Propulsion Laboratory	1660909		\$7,526
43.RD	Gamma-Ray Large Area Space Telescope (GLAST) Flight		NAS5-00147	\$383,800	\$1,576,484
43.RD	Helioseismic and Magnetic Imager For Solar Dynamics Observatory		NAS5-02139	\$197,510	\$3,773,287
43.RD	Interior working group telecon co-chair	Jet Propulsion Laboratory	1655926		\$10,870
43.RD	Iris Small Explorer Mission	Lockheed Martin Corporation	Sub 8100003073 Line #6		\$113,186
43.RD	Mini Radio Frequency Instrument for Lunar Orbiter	Johns Hopkins University Applied Physics Laboratory	164323		\$29,264
43.RD	REASON (Radar for Europa Assessment and Sounding: Ocean to Near Surface) REASON	University of Texas at Austin	UTA16-001083		\$20,403
43.RD	The Highest-energy Electromagnetic Counterparts to Neutron Star Mergers	Space Telescope Science Institute	HST-HF2-51407.001-A		\$28,433
43.RD	WFIRST Extragalactic Potential Observations (EXPO) Science Investigation Team	University of California, Santa Cruz	A16-0381-S003-P0590505		\$34,770
<b>National Endowment for the Humanities</b>					<b>\$19,195</b>
45.149	Digitize Street & Smith Dime Novels	Board of Trustees of Northern Illinois University	G2B66828-2		\$13,843
45.161	The Marzamemi Church Wreck		RZ-249777-16		\$5,352
<b>National Science Foundation</b>					<b>\$80,793,675</b>
47.041	A Shock Tube Study of Laminar Flames in Transportation Fuels at Engine Relevant Temperatures		1940865		\$70,973
47.041	An Ingestible Intraluminal Bioelectronic Capsule (IBC) for Closed-Loop Diagnosis and Treatment of Gastrointestinal Disorders	Niche Medical	1938625		-\$54
47.041	Blockchain-Enabled Machine Learning on Confidential Data	Onu Technology, Inc.	181514 / Prime #2026404		\$220,397
47.041	CAREER: Data Analytics for Distribution Systems Management and Operations		1554178		\$124,804
47.041	CAREER: Enabling the Design of Future Robotic Transportation Systems via Spatial Queueing Network Theory		1454737		\$115,864
47.041	CAREER: Healthcare Decision Models with High Dimensional Data		1554140		\$100,130
47.041	CAREER: INTEGRATED WATER, ENERGY, AND EMISSIONS DECISION MAKING FOR A LOW CARBON FUTURE WITH COAL-FIRED POWER PLANTS		2023841		\$68,236
47.041	CAREER: Mixed-bonded IV-VI semiconductors for hybrid heterostructures		2036520		\$13,433
47.041	CAREER: Probabilistic Design and Engineering of Sustainable Infrastructure Using Multi-Physics Modeling Approaches		1453881		\$7,006
47.041	CAREER: Quantum Acoustic Information Processing with Phononic Crystal Devices		1941826		\$159,433
47.041	CAREER: Regulation of stem cell migration by extracellular matrix plasticity		1846367		\$118,340
47.041	CAREER: Revealing a Reduced-Order Model for Chaotic Electroconvection and its Applications		1553275		\$47,872
47.041	CAREER: Stretchability by Design - Understanding Mechanical Phenomena in Microarchitected Soft Material Systems		1553638		\$7,554
47.041	CAREER: Structures as Sensors: Elder Activity Level Monitoring through Structural Vibrations		2026699		\$88,710
47.041	CAREER: Ultrasonically-Powered Smart Medical Implants for Monitoring and Modulating Local Physiology		1454107		\$9,875
47.041	CAREER: UrbanEMOS: An Urban Energy Management Operating System for understanding and co-optimizing building, energy and human systems at multiple scales		1941695		\$2,582
47.041	Center For Energy Efficient Electronics Science (E3S)	University of California, Berkeley	007445/BB00099670/EECS-0939514 1935315		\$3,445
47.041	Collaborative Research: Bottom-up Construction of a Synthetic Neuron and Programmable Neuronal Network				\$98,089
47.041	Collaborative Research: Engineering Fully Biobased Foams for the Building Industry		1727836		\$1,472

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
47.041	Collaborative Research: Ensuring Sustainable Energy Storage Operations in the US Electricity Grid		1948963		\$86,959
47.041	Collaborative Research: Examination of the Multi-physical Properties of Microgravity-synthesized Graphene Aerogels		1929363		\$139,214
47.041	Collaborative Research: INFEWS: N/P/H2O: Remote and autonomous sensing for managing the economic and environmental consequences of salinity-impacted agricultural waterways		2024004		\$44,523
47.041	Collaborative Research: Mapping High-Performance Design Team "Genome"		1635386		\$14,611
47.041	Collaborative Research: Mixed-Autonomy Traffic Networks: Routing Games and Learning Human Choice Models		1953032		\$8,409
47.041	Collaborative Research: Nonlinear Coupling and Relaxation Mechanisms in Micro-Mechanics		1662464		\$74,111
47.041	Collaborative Research: RAPID: Coronavirus Persistence, Transmission, and Circulation in the Environment		2022877		\$6,094
47.041	Collaborative Research: Simulating crack propagation in steel structures under ultra-low cycle fatigue and low-triaxiality loading from earthquakes and other hazards		1635043		\$65,608
47.041	COVID-19 - RAPID: Effective mass spray disinfection using Unmanned Aerial Vehicles (UAVs)		2030390		\$179,608
47.041	CPS: Medium: Collaborative Research: Optimization-Based Planning and Control for Assured Autonomy: Generalizing Insights From Autonomous Space Missions		1931815		\$88,456
47.041	CPS: Medium: Secure Smart Machining		1931750		\$337,930
47.041	Creep in shale across space and time		1914780		\$130,589
47.041	DMREF/Collaborative Research: Designing Mutable Metamaterials with Photo-Adaptive Meta-Atoms		1921730		\$135,140
47.041	DMREF: Collaborative Research: Programming mesostructured colloidal soft matter through complex quenching and annealing		1760106		\$5,757
47.041	EAGER: Embedded Deep Neural Nets for Predicting Reynolds Stresses in Complex Flows		1940551		\$161,079
47.041	EAGER: Exploring the coupled dynamics of urban systems using data science and micro-experimentation		1642315		-\$1,008
47.041	EAGER: RCN: Wastewater Surveillance of SARS-CoV-2	University of Notre Dame	2039408U		\$25,000
47.041	ECO-CBET: Collaborative Research: Towards a Circular Nitrogen Bioeconomy: Tandem Bio- and Chemocatalysis for Sustainable Nitrogen Recovery and Nitrous Oxide Mitigation		2033822		\$31,845
47.041	EFRI ACQUIRE: Distributed Quantum Computation Using Ion Chips and Integrated Photonics	University of Maryland	52220-Z3075201		\$17,203
47.041	EFRI DChem: Engineering interfaces between plasma, catalysts, and reactor design for natural gas conversion to liquid products	Princeton University	SUB0000425		\$24,401
47.041	EFRI NewLAW Preliminary Proposal: Engineering Resilient Photonic Structures and Devices with Broken Time-Reversal Invariance	Washington University in St. Louis	WU-17-126/PO 2928376C		\$17,784
47.041	EFRI NewLAW: CMOS-Compatible Electrically Controlled Nonreciprocal Light Propagation With 2D Materials	North Carolina State University	2017-1718-03		\$218,301
47.041	EFRI NewLAW: Mid-infrared topological plasmon-polaritons with 2D materials	University of Minnesota	A006382203		-\$32,538
47.041	EFRI NewLAW: New frontiers for topologically-protected propagation of light, sound, elastic, and mechanical waves	University of Texas at Austin	UTA16-000937		\$18,113
47.041	EFRI NewLaw: Non-reciprocal, topologically protected propagation using atomically thin materials for nanoscale devices	Emory University	T881192		\$135,427
47.041	Emerging Materials for Energy storage and environmental Research enabled through Atomic Layer Deposition (EMERALD)		1805084		\$128,609
47.041	Fundamental Physical Understanding of Matrix-stabilized Combustion in Porous Media		1800906		\$79,650
47.041	FW-HTF Theme2: Collaborative Research: Enhancing Human Capabilities through Virtual Personal Embodied Assistants in Self-Contained Eyeglasses-Based AR Systems		1839974		\$283,250
47.041	Generation of food-based chlorination disinfection byproducts (F-DBPs) during food processing		1935904		\$76,550
47.041	Geometric Structure of the Turbulent Cascade		1706950		\$20,620
47.041	Haptics in Telerobotics for Improved Remote Dexterity	Tangible Research, Inc.	181398		\$46,003
47.041	High-through scalable manufacturing of high-performance organic devices	University of California, Davis	201602722-01(A17-0377-S)		\$28,139
47.041	High-Voltage High-Power-Density Power Electronics for Emerging Medical, Environmental, and Aerospace Applications		1808489		\$103,307
47.041	I-Corps: An in vivo central nervous system drug screening platform with noninvasive imaging		2106025		\$1,117
47.041	I-Corps: Developing technology for social-emotional learning for young children		2133779		\$27,778
47.041	I-Corps: On-farm production of nitrogen fertilizer from air, water, and renewable electricity		2041553		\$44,444
47.041	I-Corps: Scheduling software to enable visualization of changes for the construction industry		2052478		\$37,652
47.041	Integrated Modeling and Control of Aftertreatment Systems for Clean, Efficient and High-Performing Gasoline Direct Injection Engines		1839050		\$74,893
47.041	Laser Frequency Metrology of Vapor Cells	Vapor Cell Technologies, LLC	SPO 193423		\$1,938
47.041	Molecularly selective sensors based on organic semiconductors and artificial receptors: demonstrations and scaling studies.		1804915		\$77,190
47.041	Nanostraw-mediated Primary Immune Cell Reprogramming	Navan Technologies, Inc.	SPO #137710		-\$1,952
47.041	National Science Foundation's Alan T. Waterman Award		1933624		\$109,913
47.041	NHERI Computational Modeling and Simulation Center	University of California, Berkeley	00009369 PO#BB00824561		\$404,780
47.041	NNCI: nano@stanford		2026822		\$877,648
47.041	NNCI: Stanford Nano Shared Facilities		1542152		\$317,704
47.041	Norovirus persistence in surface water		1804169		\$14,321
47.041	NRI: FND: COLLAB: Wearable Multi-Scale Haptics		1830163		\$30,769
47.041	NRI: FND: Computational and Interactive Design of Soft Growing Robot Manipulators		2024247		\$292,433
47.041	NRI: INT: COLLAB: Mesh Of Robots on a Pneumatic Highway (MORPH): An Untethered, Human-Safe, Shape-Morphing Robotic Platform		1925030		\$364,047
47.041	NRI: INT: COLLAB: SYNDROME: SYNergetic DROne Delivery Network in Metropolis		1830554		\$179,670
47.041	NRI: INT: Individualized Co-Robotics	Carnegie Mellon University	1122591-399765		\$236,788
47.041	NRI: Vine Robots: Achieving Locomotion and Construction by Growth		1637446	\$12,759	\$12,759
47.041	NSF Center for Power Optimization for Electro-Thermal Systems (POETS)	University of Illinois at Urbana Champaign	088653-16967 (REU)		\$6,000
47.041	NSF Center for Power Optimization for Electro-Thermal Systems (POETS)	University of Illinois at Urbana Champaign	2014-00555-03		\$719,158
47.041	NSF ENGINEERING RESEARCH CENTER FOR RE-INVENTING AMERICA'S URBAN WATER INFRASTRUCTURE		1028968	\$1,047,898	\$2,193,691
47.041	Optomechanical antennas for silicon photonic beam-steering		1808100		\$32,207
47.041	Physics-based Scale Enrichment for Eddy-Resolving Turbulence Simulations		1803378		\$119,797
47.041	Planning Grant: Engineering Research Center for Digital Twins in Engineering and Medicine		1937129		\$63,741
47.041	Programmable Surfaces by Scalable Self-assembly of Particles Printed by Two-photon Polymerization		2052251		\$39,520
47.041	Quantifying Uncertainties in Computational Fluid Dynamics predictions for Wind Loads on Buildings		1635137		-\$6
47.041	Q-WHIRL: Quantifying Wind Hazard Interference effects in Real urban environments		1749610		\$130,537
47.041	RAISE: TAQS: Engineering high quality, practical qubits in diamond		1838976	\$234,054	\$304,680
47.041	RAISE: TAQS: Inverting the design paradigm: Tunable qubits in hybrid photonic materials as a scalable platform for quantum photonic devices	University of Delaware	51696		\$86,886

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
47.041	RECODE: Real-time analysis and environmental feedback for directed differentiation of liver organoids		2033302		\$167,830
47.041	RET Site: Teaching Engineering Design & Innovation		1760810		\$173,193
47.041	RoL: EAGER: DESYN-C Spontaneously Synthesized RNA Protocells for Biological Catalysis		1844119		\$55,422
47.041	SenSE: Artificial Intelligence-enabled Multimodal Stress Sensing for Precision Health		2037304		\$242,522
47.041	Stanford Nanofab Facility Program Income		44771-7470		-\$220
47.041	The Dynamics of Curved Fluid Films Between Complex Interfaces		1952635		\$147,810
47.041	The Rheology of Complex Suspensions In Viscoelastic Suspending Fluids		1803765		-\$23
47.041	Transport of Non-Spherical Particles in Wavy Flows		1706586		\$70,011
47.041	Understanding neurodegeneration across the scales		1727268		\$48,528
47.041	Understanding the impact of mechanical constraints on the dendrite formation in lithium metal anodes		1911836		\$87,037
47.041	Universal meshes for crack propagation problems and their application to fracking		1662452		\$72,551
47.041	WERF WRF Collaborative Research:Quantifying the Contribution of Disinfection Byproducts to the Toxicity of Wastewaters Purified for Potable Reuse: Which Byproduct Classes Matter?		1706154		\$10
47.049	Renewal of Understanding Gravity at the Smallest Scale		1802952		\$97,843
47.049	U.S. ATLAS Operations: Discovery and Measurement at the Energy Frontier	Stony Brook University, State University of New York	76749/1136652/2		\$233,286
47.049	133975_New Inks for 3D Bio-Printing based on Bio-orthogonal Click Chemistry		1808415		\$143,719
47.049	134033_Structure-property relationships in novel conjugated mixed conductors		1808401		\$121,640
47.049	134823_An Approach to Robust Performance Analysis using Optimal Transport		1820942		\$56,398
47.049	Compositional and Temperature Controls on Structural Order, Dynamics, and Properties of Multicomponent Borosilicate Glasses		1400625		-\$11
47.049	Asymptotic in Probability: walks and graphs, disordered dynamics, interacting particles		1954337		\$38,994
47.049	CalTech-NSF Line Intensity Mapping with the CO Mapping Array Pathfinder - Probing Two Key Epochs in Cosmic Evolution	California Institute of Technology	S453373		\$5,668
47.049	CAREER: Chemical Synthesis and Biophysical Study of Noncanonical Membrane Lipids		1846512		\$265,463
47.049	CAREER: Controlling Polymer Degradation, Microstructures, and Sequences via Living Alternating Polymerization of Cyclopropenes and Low-Strain Cyclic Olefins		1553780		\$130,521
47.049	CAREER: Dielectric screening in structured polymer electrolytes		1846547		\$128,412
47.049	CAREER: Investigating the structure and dynamics of proton defects in heterogeneous environments with accelerated quantum simulations		1652960		\$137,490
47.049	CAREER: Two Higgs are Better than One: Investigating Electroweak Symmetry Breaking at the LHC and Beyond with Real-Time Charged Particle Reconstruction		1553564		\$49,971
47.049	CAREER: Two-Dimensional Phase Change Materials		1455050		\$110,606
47.049	CAS: Improving the Efficiency of Supported Palladium Catalysts for Methane Complete Combustion Using Monodisperse Nanocrystals		1956300		\$89,795
47.049	CCI Center in Selective C-H Functionalization	Emory University	A218940/CHE1700982		-\$8,215
47.049	CCI Center in Selective C-H Functionalization	Emory University	A374186		\$300,268
47.049	CCI Phase I: Center for First Principles Design of Quantum Processes		1740645	\$37,006	\$630,064
47.049	CCI Phase II: Center for Genetically Encoded Materials (C-GEM)	University of California, Berkeley	2002182/00010389/BB01406156		\$312,985
47.049	Chiral Quantum Networks	University of California, Santa Barbara	KK1924		\$100,945
47.049	Collaborative Research: Axion Resonant InterAction DetectiON Experiment (ARIADNE) - a continuation proposal		1806395		\$202,578
47.049	Collaborative Research: Axion Resonant InterAction DetectiON Experiment (ARIADNE) - a continuation proposal		2110944		\$37,284
47.049	Collaborative Research: Fusing massive disparate data and fast surrogate models for probabilistic quantification of uncertain hazards		2053414		\$10,697
47.049	Collaborative Research: LSC Center for Coatings Research		1708175		\$21,757
47.049	Collaborative Research: LSC Center for Coatings Research		2011706		\$69,743
47.049	Collaborative Research: Magnetically Assisted Self-Assembly for Facile 2D Membrane Protein Crystallization		2023833		\$129,384
47.049	Collaborative Research: Optical Transitions in Metallic Nanoclusters at High Pressure		2002936		\$81,538
47.049	Collaborative Research: Stanford-Florida program in Support of LIGO on Coatings and Core Optics		1707866		\$51,464
47.049	Collaborative Research: Stanford-Florida program in Support of LIGO on Coatings and Core Optics		2011571		\$349,343
47.049	Collaborative Research: Statistical Optimization for Barcoding and Decoding Single-Cell Dynamics via CRISPR Gene Editing		1953415		\$88,265
47.049	Collaborative Research: Tolerance-Enforced Simulation of Stochastic Processes		1838576		-\$11
47.049	Collaborative Research: Transferable, Hierarchical, Expressive, Optimal, Robust, Interpretable Networks		2032014		\$31,979
47.049	Columbia University Materials Research Science and Engineering Center	Columbia University	5(GG008600-13)		\$19,522
47.049	Combinatorial optimization, spin models and the geometry of sparse random graphs		1613091		\$26,728
47.049	Conjugated Systems Containing Antiaromatic Cyclobutadienoids: Synthesis and Study of the Multifaceted Effects of Local Antiaromaticity		1855922		\$272,642
47.049	Controlling the band structure of 2D semiconductors by their dielectric environment		1708457		\$11,305
47.049	CQIS: Quantum Chaos and Quantum Gravity from Entanglement		2111998		\$26,559
47.049	Crystal orientation and defect control in active and passive plasmonic systems		1804224		\$117,989
47.049	D3SC and EAGER: Using Deep Learning to Find Algorithms for Optimizing Chemical Reactions		1734082		\$19,983
47.049	Dark Sectors and More with the ATLAS Experiment		2110374		\$7,083
47.049	Deep Learning for Inverse Problems		2011699		\$42,188
47.049	Defect Characterization and Control in Metastable GeSn Optoelectronic Alloy Nanostructures		2003266		\$108,389
47.049	Design Rules for Obtaining White Light from Layered Perovskites and Related Lattices		1904443		\$172,971
47.049	DFG/NSF: Novel Low Loss Coatings - Enabling the Third Generation of Gravitational-Wave Detectors		1758669		\$123,808
47.049	Discovering what matters: informative and reproducible variable selection with applications to genomics		1712800		-\$7,355
47.049	Diverse Degradable Polymers from Versatile Ring-Opening Metathesis (Co)Polymerization of Electron-Rich Cyclic Olefins		2106511		\$2,835
47.049	DMREF: Collaborative Research: Accelerating Thermoelectric Materials Discovery via Dopability Predictions	Colorado School of Mines	401279 - 5801		\$88,034
47.049	DMREF: Collaborative research: Data driven discovery of synthesis pathways and distinguishing electronic phenomena of 1D van der Waals bonded solids		1922312		\$138,880
47.049	DMS-EPSCR: Fast martingales, large deviations and randomized gradients for heavy-tailed target distributions		2118199		\$24,335
47.049	Dynamics of Ions and Molecules in Concentrated Electrolyte and Acid Solutions		1954392		\$106,061
47.049	Efficient Monte Carlo algorithms for Bayesian inference		1811920		\$64,623
47.049	Engineering Cytoskeletal Active Materials	University of Chicago	AWD100425 (SUB00000120)		\$18,042
47.049	Enhancing helicity-dependent optical interactions in inversion-asymmetric materials		1905209		\$83,676
47.049	Evolutionary Dynamics and Diversity in High Dimensions		1607606		\$207,034
47.049	Exploring Excited-State 1D Dipolar Quantum Matter with Dysprosium Gases		2006149		\$47,817
47.049	Flexible Statistical Modeling		2013736		\$25,076



STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM  
YEAR ENDED AUGUST 31, 2021

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
47.049	Flexible Statistical Modelling		1608987		\$140,911
47.049	Floer Theories for 3-Manifolds		2028658		-\$14
47.049	FRG: Collaborative Research: Crossing the Walls in Enumerative Geometry		1564500		\$9,991
47.049	FRG: Collaborative Research: Generative Learning on Unstructured Data with Applications to Nature Language Processing and Hyperlink Prediction		1952386		\$45,120
47.049	Functional Materials Through Synthesis Informed Design		1856414		\$178,035
47.049	Galois Representations and Automorphic Forms		1902265		\$51,855
47.049	Geometric Structures And Representative Varieties		1107263		-\$1,352
47.049	Geometry & Statistics		1501767		\$449,815
47.049	GOALI: CAS: Organocatalytic Reactions and Processes for Polymer Chemistry		2002933		\$220,458
47.049	GOALI: SusChem: Organocatalysis: A Platform for Sustainable Polymer Chemistry.		1607092		-\$2,254
47.049	High Throughput Structure Determination for Low Thermal Noise Coatings		2011782		\$31,173
47.049	IAS/Park City Mathematics Institute	Institute for Advanced Study	7456-2305-1915835		\$65,787
47.049	Imaging correlations and charge order in transition metal dichalcogenide moiré systems		2103910		\$31,348
47.049	Interfacing Spins with Photons: Quantum Many-Body Physics with Non-Local Interactions		1753021		\$31,705
47.049	Laplace Eigenfunctions and Unique Continuation		1956294		\$54,249
47.049	Large Scale Geometry of Scalar Curvature and Minimal Surfaces		2016403		\$28,407
47.049	Large Synoptic Survey Telescope (LSST) Project	Association of Universities for Research in Astronomy	N51908C.A-7		\$171,074
47.049	Laser Control of Quantum Evolution in Molecules		1806145		\$293,621
47.049	Long Time Behavior for Differential Equations in Random Media		1910023		\$60,487
47.049	Mathematical Problems in General Relativity		2005435		\$105,351
47.049	Matrix completion with non-uniform missing patterns, a new measure of conditional dependence, and applications to feature selection		2113242		\$20,765
47.049	Mean Curvature Flow and Minimal Varieties		1711293		\$9,142
47.049	Measurements of current-phase relationships in Josephson junctions		1708914		\$159,713
47.049	Methods in Extremal Combinatorics		1855635		\$110,766
47.049	Microlocal Analysis and Applications		1953987		\$110,808
47.049	Microlocal Methods in Geometric Analysis		1608223		\$33,432
47.049	Moduli Problems in Algebraic Geometry, their Structures and their Applications		1601211		\$82,262
47.049	MRI: Development of Layered Quantum Materials Synthesis Facility		2018008		\$103,315
47.049	MRI: Development of the Gemini Planet Imager Upgrade	University of Notre Dame	203717SJU		\$23,849
47.049	MSIP: Innovation to Achieve the Full Science Reach of the BICEP Array Stage 3 CMB Polarization Experiment		1836010	\$1,241,739	\$1,331,596
47.049	Multivariate histograms and inference with finite sample guarantees		1916074		\$65,140
47.049	Nanoscale Control over Surface Functionalization by Molecular Layer Deposition		1904108		\$49,512
47.049	New Invariants of Knots and 3-Manifolds		2003488		\$117,469
47.049	New Strategies for Electrocatalytic Reactions with Transition-Metal Hydrides		2101256		\$55,756
47.049	New Techniques And Analyses For Random Sampling		1954042		\$84,114
47.049	Novel, engineered bio-inks for 3D printing of complex, perfusable structures		2103812		\$47,171
47.049	NSF - LEARNING DECISION RULES WITH OBSERVATIONAL DATA		1916163		\$86,378
47.049	NSF/DMR-BSF: Theory of quantum materials		2000987		\$149,831
47.049	NSF-BSF: Investigation of Streaming Instabilities for tailoring the profile of high-energy laser-generated proton beams		1903414		\$190,935
47.049	One-Dimensional Gases of Dysprosium		1707336		\$17,367
47.049	Placing spins in semiconductors		2102306		\$57,564
47.049	Polymer Physics Across Scales: Bridging Atomistic and Coarse-Grained Polymer Models		1855334		\$130,414
47.049	Properties of approximate inference for complex high-dimensional models		1811614		\$131,319
47.049	QLCI-CI: Enhanced Sensing and Distribution Using Quantum States Stanford sub-award	University of Colorado, Boulder	1559523 PO#1001397680		\$265,914
47.049	Quantum input-output modeling in the ultra-fast domain: theoretical foundations and experimental validation		2011363		\$87,401
47.049	Questions and Methods in Probabilistic Combinatorics		1953990		\$49,957
47.049	RAPID - The LSST Documentary Project		2027217		\$12,036
47.049	Renewal of Understanding Gravity at the Smallest Scale		2108244		\$5,425
47.049	Research in Particle Theory, Cosmology, and Quantum Gravity		1720397		-\$9,805
47.049	Research in Particle Theory, Cosmology, and Quantum Gravity		2014215		\$655,580
47.049	Robust Diagnosis in Electronic Health Records Integrating Physics-based Missing Data Multiple Imputation, Fast Inference for Hemodynamic Models, and Differential Privacy	University of Notre Dame	203615SU		\$19,947
47.049	Robust Wasserstein Profile Inference		1915967		\$36,322
47.049	Searching for Dark Matter Subhalos in Distant Strong Gravitational Lenses		1716527		\$100,945
47.049	Spectroscopic Elucidation of Cu and Fe Active Sites in Zeolites		1660611		\$84,746
47.049	Spin Functionality in Perovskite Stannates Through Complex Oxide Heteroepitaxy		1762971		\$122,189
47.049	Stanford Program in Support of LIGO - Seismic Isolation and Controls		1708006		\$178,803
47.049	Stanford Program in Support of LIGO - Seismic Isolation and Controls		2011786		\$253,050
47.049	Statistical Methodology and Applications to Engineering and Economics		1811818		\$40,762
47.049	Strong Field Quantum Control		PHY-0969322		-\$157
47.049	Strong Spin-Orbit Coupling And High Mobility Via Complex Oxide Heteroepitaxy		2037652		\$41,134
47.049	Superconductor-(Metal)-Insulator Transitions: Understanding the Emergence of Anomalous Metallic States		1808385		\$182,236
47.049	SusChEM: Collaborative Research: Identification of the critical length scales and chemistries responsible for the anti-fouling properties of heterogeneous surfaces		2023847		\$6,935
47.049	Symplectic Topology of Weinstein manifolds and related topics		1807270		\$63,128
47.049	Symplectic, conformal symplectic, contact structures and foliations in interaction		2104473		\$57,523
47.049	Tensor Network Computation: Representations, Algebra, and Applications		1818449		\$8,685
47.049	The Multi-Mission Maximum Likelihood framework (3ML): a tool to explore the high-energy Universe in the era of Multi Messenger Astrophysics		2011759		\$75,343
47.049	The Role of Catalyst Microstructure in Gas Diffusion Electrosynthesis of C2+ Products		1855950		\$151,911
47.049	The Structure of the Gromov-Witten Invariants		1905361		\$97,526
47.049	The SuperCDMS SNOLAB Experiment	University of California, Berkeley	00008790 PO# BB01304587		\$370,400
47.049	Theoretical modeling of protein-driven chromosomal dynamics and biological function		1707751		\$89,191
47.049	Topics in Number Theory		1500237		\$69,226
47.049	Topics in Number Theory		2100933		\$39,942
47.049	TRIPODS+X:RES: Collaborative Research: The Future of the Road - A Data-Driven Redesign of the Urban Transit Ecosystem		1839229		\$84,208
47.049	Two-dimensional KPZ evolution, fluctuation lower bounds, and ultrametricity		1855484		\$107,648
47.049	Two-Dimensional Synthetic Quantum Matter		1610618		\$8,002
47.049	Year 3 C-GEM phase I	University of California, Berkeley	00010326,PTE2021739		-\$4,843
47.050	144924 NCAR/UCAR Early Career A prospective and resilience longitudinal study of environmental coastal threats on health	National Center for Atmospheric Research	SUBAWD002260 // P2013240		\$59,192

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
47.050	144924 NCAR/UCAR Early Career: A prospective longitudinal study of environmental coastal threats on health and resilience	National Center for Atmospheric Research	SUBAWD002230/P2012909/P2013240		\$147,162
47.050	166851 Pamuku: NSF-Collaborative Research: How are Rhyolites Generated? Evaluating Models for the Volcanic-plutonic Connection in the Searchlight Magmatic System, Nevada		2007057		\$8,994
47.050	178461 NSF Arrigo Collaborative Research: Quantifying N <sub>2</sub> fixation rates of non-cyanobacterial diazotrophs and environmental controls on their activity		2023278		\$66,598
47.050	201048 NSF Univ South Carolina - Collaborative Research: US GEOTRACES GP17-OCE: Mapping nitrous oxide sources and sinks through isotopic measurements in the Pacific Ocean		2048961		\$3,121
47.050	204973 NSF - CAREER: Retention and Mobility of Beryllium in Soils and Sedimentary Environments		2103501		\$36,296
47.050	204979 NSF - RRR: Collaborative Research: From rock to regolith to rivers: weathering, grain size, and controls on soil production and fluvial incision		2104111		\$105,136
47.050	204985: EAGER SHS: Soil Soundscapes from Seismic Arrays		2102117		\$148,851
47.050	Belmont Forum Collaborative Research: Risk mapping and targeted snail control to support schistosomiasis elimination in Brazil and Cote d'Ivoire under future climate change		2024383		\$32,624
47.050	CalTech/NSF MRI: Development of a 150 GHz Receiver for the BICEP Array CMB Polarimeter SPO#127760	California Institute of Technology	S401848		\$2,204
47.050	CAREER: Crossing over into the geochemical milieu: Using the molecular genomic record to inform the geologic biomarker record		1752564		\$57,269
47.050	CAREER: Cross-Instrument Synthesis of Antarctic Radar Sounding Observations		1745337		\$92,063
47.050	CEDAR: Investigation of Atmospheric Neutral Density Dynamics Through Meteor Observations		1920383		\$227,026
47.050	CEDAR: Thunderstorm Coupling to the Lower Ionosphere through Electromagnetic, Acoustic, and Gravity Waves		AGS-1243176	-\$605	-\$605
47.050	CNH-L Coupling Global Climate Mitigation and Local Societal Co-Benefits	University of California, San Diego	92908921 (PO# S9001719)		\$46,879
47.050	Co-Director of the Southern California Earthquake Center	University of Southern California	91270823 / PO 10617840		\$133,024
47.050	Collaborative Research: Identifying and harnessing local refuges from oceanographic extremes for coastal marine species and fisheries		1736830		\$124,453
47.050	Collaborative Research: Analysis and Modeling of Nonlinear Wave-Particle Interactions from the Siple Transmitter Experiment		1542477		\$11,952
47.050	Collaborative Research: Cobalamin and Iron Co-Limitation Of Phytoplankton Species (CICLOPS) in Terra Nova Bay		1643845		\$28,520
47.050	Collaborative Research: Helium-isotope systematics along seismic profiles in Tibet to study geometry of Indian and Tibetan lithosphere beneath the Lhasa and Qiangtang terranes		1628282		-\$71
47.050	Collaborative Research: Hydrologic Disturbance in Tropical Peatlands: Linking Drainage, Soil Moisture, Flammability, and Carbon Fluxes		1923478		\$43,509
47.050	Collaborative Research: Imaging the Beginning of Time from the South Pole: The next Stage of the BICEP Program		1638978		\$309,436
47.050	Collaborative Research: Improved observation and parameterization of bottom boundary layer turbulence and particle properties for sediment fate and transport modeling		1736668	\$127,314	\$303,045
47.050	Collaborative Research: Kelp forest hydrodynamics: observations of drag and cross-shore exchange on the inner shelf		2022927		\$53,055
47.050	Collaborative Research: Management and implementation of the US GEOTRACES Pacific Meridional Transect		1657944		\$97,102
47.050	Collaborative Research: Measurement of Particle Aggregation in Laboratory-scale Flows for Improved Models of Volcanic Ash Fallout and Entrainment		1756068		\$71,250
47.050	Collaborative Research: Mechanisms and Controls of Nitrous Oxide Production in the Eastern Tropical North Pacific Ocean		1657868		\$7,286
47.050	Collaborative Research: Mesobot: A Robot For Investigating The Ocean Interior		1636522		\$16,923
47.050	Collaborative Research: Predicting the global location of heat tolerant corals: Palau patch reefs as a general model		1736736	\$1,847	\$62,499
47.050	Collaborative research: Revisiting the low-frequency variability of the extratropical circulation using non-EOF modes and linear response functions		1921409		\$169,546
47.050	Collaborative Research: The central Apennines Earthquake cascade under a new microscope		1759810		\$17,868
47.050	Collaborative Research: Tsunami Hazard to West Antarctic Ice Shelves		1744759		\$17,986
47.050	Collaborative Research: US GEOTRACES PMT: Investigating geochemical tracers of the Pacific nitrogen cycle and budget		1736756		\$145,545
47.050	Community-based educational infrastructure for numerical simulation in the Earth Sciences: a reactive transport use case	Colorado School of Mines	401654-5801		\$17,795
47.050	Computational simulations of volcanic eruptions and infrasound		1930979		\$49,529
47.050	Constraints on absolute magma chamber volume from geodetic measurements: Trapdoor faulting in the Galapagos		1829763		\$52,600
47.050	CubeSat Ideas Lab: Collaborative Research: Space Weather Atmospheric Reconfigurable Multiscale Experiment (SWARM-EX) CubeSats		1936512		\$88,248
47.050	CubeSat Ideas Lab: Collaborative Research: Virtual Super-resolution Optics with Reconfigurable Swarms (VISORS)		1936542		\$97,888
47.050	Disorder and Dynamics in Silicate and Aluminosilicate Liquids, Glasses, and Crystals Relevant to Geochemical Processes: Nuclear Magnetic Resonance Studies		1753585		\$91,140
47.050	EAGER SHS: Can remotely imaged vegetation characteristics provide a window into soil nutrient cycles?		1841547		\$43,446
47.050	Earthquake Sequence Simulations with Thermomechanical Coupling and Fault-Zone Fluid Transport		1947448		\$102,975
47.050	Estimation of Antarctic Ice Melt Using Stable Isotopic Analyses of Seawater		1644118		\$91,185
47.050	Evolution of Cordilleran Lithosphere: Transition from Mesozoic Shortening to Cenozoic Extension, East-Central Nevada		EAR-1322084		-\$924
47.050	Experimental Investigation For the Characterization of the Geophysical Response of Rock-Fluid Interactions		1451345		\$14,543
47.050	Fire and famine: Controls on microbial activity in the deep hydrothermal subsurface of the Guaymas Basin	Columbia University	102B(GG009393)/PO G13971		\$29,996
47.050	FUSE: Food-water-energy for Urban Sustainable Environments		1829999		\$171,987
47.050	GEM: Extending the Capabilities of CubeSats for Measuring Radiation Belt Precipitation		1602607	-\$175	-\$175
47.050	Geophysics of Iron in the Earth's Core		2049620		\$5,475
47.050	How much does nest density matter? Using novel technology to collect whole-colony data on Adelie penguins	Point Blue Conservation Science	AW780750		\$67,204
47.050	INFEWS/T1: Reducing the Environmental Impacts of FEW Systems In and Around Cities	University of California, Berkeley	00009606/PO# BB01400042		\$190,114
47.050	Insights into Episodic Caldera Collapse and Magmatic Systems from the 2018 Eruption of Klauaea Volcano		2040425		\$64,347
47.050	INSIGT: Investigating Shear-margin Interactions with Grounding-line Transitions		1744758		\$57,818
47.050	Investigating the Large-Scale Solar Magnetic Field During the Transition to Solar Cycle 25		1836370		\$67,248
47.050	Moving from correlation to mechanism: testing the role of temperature and oxygen change in the Great Ordovician Biodiversification Event		1922966		\$63,778
47.050	Nitrogen Fixation in Deep-Sea Sediments		1634297		\$30,162
47.050	NSFGEO-NERC: Collaborative Research: Energy transfer between submesoscale vortices and resonantly-forced inertial motions in the northern Gulf of Mexico		1851450		\$163,335
47.050	NSFPLR-NERC: The Future of Thwaites Glacier and its Contribution to Sea-level Rise	University of California, Santa Cruz	A18-0296-S004-P0668401		\$60,935
47.050	NSFPLR-NERC: TIME - Thwaites Interdisciplinary Margin Evolution - The role of shear margin dynamics in the future evolution of Thwaites drainage basin	University of California, Santa Cruz	A18-0296-S002-P0668511		\$54,272

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
47.050	Prediction of solar eruptions with machine-learning algorithms combining physical models and observations		1922713	\$50,743	\$114,164
47.050	REU Site: Stanford Earth Summer Undergraduate Research in Geoscience and Engineering (SURGE)		1852022		\$82,899
47.050	Rui: Collaborative Research: Building A Mechanistic Understanding Of Water Column Chemistry Alteration By Kelp Forests		1737096		\$42,533
47.050	Seafloor Fiber Optic Array in Monterey Bay (SEAFOAM)		2023301	\$204	\$1,714
47.050	Structural architecture and evolution of the southern flank of the Brooks Range fold and thrust belt, Arctic Alaska		1624582		\$31,500
47.050	Submesoscale instabilities near the sea-floor and their effects on the ocean circulation and mixing		1756118	\$56,369	\$61,529
47.050	Surface elevation history of the northern North America Cordillera as constraint for Eocene tectonic and climatic boundary conditions		1450357		\$10,147
47.050	The interaction between breaking internal waves and gravity currents on inclined slopes		2022930		\$98,184
47.050	Transdisciplinary Training Collaboratory: Building Common Ground		2015911		\$24,025
47.050	Using stable isotope incubations to quantify methane and acetate oxidation in the deep subsurface of the Guaymas Basin, Mexico	Columbia University	102C(GG009393-04)		\$2,033
47.050	Wavy turbulent flow over a coral reef: vertical structure and fluxes		1948189		\$213,874
47.070	138090_Sidford_NSF CAREER_Theory of Fast Graph Optimization		1844855		\$47,557
47.070	141068_HRI Pioneers Wkshp 2019_The 2019 HRI Pioneers Workshop at the 2019 ACM/IEEE International Conference on Human-Robot Interaction		1918174		-\$299
47.070	170022 NSF Sheshadri, Collaborative Research: Framework: Improving the understanding and representation of atmospheric gravity waves using high-resolution observations and machine learning		2004492		\$134,823
47.070	AF: Medium: Collaborative Research: Beyond Sparsity: Refined measures of complexity for linear algebra		1763315		\$113,811
47.070	AF: Medium: Collaborative Research: Circuit Lower Bounds via Projections		1921795		\$18,701
47.070	AF: Medium: Collaborative Research: Exploiting Opportunities in Pseudorandomness		1763311		\$153,556
47.070	AF: MEDIUM: Collaborative Research: Foundations of Adaptive Data Analysis		1763191		\$101,807
47.070	AF: Small: Robust and Secure Learning		1813049		\$46,513
47.070	AF:Medium:Collaborative Research:The Quest for Statistically Optimal Algorithms		1704417		\$84,615
47.070	AF:SMALL:Geometry of Polynomials and Algorithm Design		1812919		\$73,488
47.070	AltF: Collaborative Research: Efficient High-Dimensional Integration using Error-Correcting Codes		1733686		\$147,101
47.070	Automatically Detecting Security Events and Trends in Network Telescope Data	University of Michigan	SUBK00010794 / 3005341607		\$89,303
47.070	BIGDATA: F: Computationally efficient algorithms for large scale crossed random effects models		1837931		\$197,538
47.070	BIGDATA: F: Reliable Inference with Big Data: Reproducibility, Data Sharing, Heterogeneity		1741162		\$31,622
47.070	CAP: Infusing Learning Sciences Research into Digital Fabrication and Making in Education		IIS-1349163		-\$149
47.070	CAREER: A Runtime for Fast Data Analysis on Modern Hardware		1651570		\$147,375
47.070	CAREER: Discrete Convexity in Algorithm Design		2045354		\$51,941
47.070	CAREER: Extracting principles of neural computation from large scale neural recordings through neural network theory and high dimensional statistics		1845166		\$4,275
47.070	CAREER: Frontiers of Unconditional Derandomization		1942123		\$59,004
47.070	CAREER: High Integrity Navigation for Autonomous Vehicles		2006162		\$114,177
47.070	CAREER: Modeling and Inference for Large Scale Spatio-Temporal Data		1651565		\$29,698
47.070	CAREER: New Fundamentals in Coding Theory		1844628		\$87,130
47.070	CAREER: Optimizing Computational Range and Velocity Imaging		1553333		\$16,225
47.070	CAREER: Safe and Influencing Interactions for Human-Robot Systems		1941722		\$27,041
47.070	CAREER: Scarlet: Learned Protocols and Functional Architectures for Low-Latency Internet Video		2045714		\$13,780
47.070	CAREER: The optimal use of data		1553086		\$30,080
47.070	CAREER: Toward a Comprehensive Generalization Theory for Deep Learning		2045685		\$29,657
47.070	CAREER: Understanding visual learning with self-supervised neural network models		1844724		\$159,896
47.070	CAREER:Interactive Training of Semantic Parsers via Paraphrasing		1552635		\$92,045
47.070	CCF-BSF: AF: CIF: Small: Low Complexity Error Correction		1814629		\$199,524
47.070	CHS: Medium: Collaborative Research: Augmented Reality Agents with Pervasive Awareness, Appearance, and Abilities		1800922		\$88,926
47.070	CHS: Medium: Collaborative Research: Charting a Research Agenda in Artificial Intelligence - Mediated Communication		1901329		\$45,314
47.070	CHS: SMALL: Blending the Virtual & the Physical: Understanding and Designing Crowd-Based Open Innovation Systems for Physical Products		1716992		\$61,917
47.070	CHS: Small: Collaborative Research: The Presentation of Self in Networked Life		1617243		-\$4,816
47.070	CHS: Small: Collaborative Research: Wearable Fingertip Haptic Devices for Virtual and Augmented Reality: Design, Control, and Predictive Tracking		1812966		\$5,433
47.070	CHS: Small: Learning and Leveraging Conventions in Human-Robot Interaction		2006388		\$14,892
47.070	CIF: Small: Collaborative Research: Generative Adversarial Networks: From Art to Science		1908291		\$3,926
47.070	CIF: Small: Collaborative Research: Generative Adversarial Privacy: A Data-driven Approach to Guaranteeing Privacy and Utility		1814880		\$81,916
47.070	CIF: Small: Learning and estimation with rough non-convex objectives: Fundamental limits and efficient algorithms		2006489		\$68,475
47.070	CIF:Medium: Collaborative Research: Learning in High Dimensions: From Theory to Data and Back		1563098		\$117,418
47.070	CIF:Medium:Collaborative Research: Geometric Network Information Theory		1704624		\$87,158
47.070	CIF:Small:Information-theoretic and Computational Thresholds in Statistical Learning		1714305		\$35,345
47.070	CIFellow 2020: Incorporating User Experiences to Improve Automated Detection of Toxic Content Online	Computing Research Association	CIF2020-SU-28		\$126,664
47.070	CNS Core: Large: Autonomy and Privacy with Open Federated Virtual Assistants		1900638		\$647,790
47.070	CNS Core: Small: Online learning of cross-layer systems for robust and high-performance Internet video transmission		1909212		\$151,436
47.070	Collaborative Research: AF: Medium: Foundations of Structured Optimization		1955039		\$77,745
47.070	Collaborative Research: AF: Medium: Modern Combinatorial Optimization: Incentives, Uncertainty, and Smoothed Analysis		1954927		\$135,281
47.070	Collaborative Research: CPS: Medium: Closing the Teleoperation Gap: Integrating Scene and Network Understanding for Dexterous Control of Remote Robots		2039070		\$1,378
47.070	Collaborative Research: Framework: Software: CINES: A Scalable Cyberinfrastructure for Sustained Innovation in Network Engineering and Science		1835598		\$21,587
47.070	Collaborative Research: Learning by Touch: Preparing Blind Students to Participate in the Data Science Revolution		2016789		\$34,895
47.070	Collaborative Research: PPOSS: Planning: Fixpoint: an operating system and architecture for data-centric computing		2028733		\$31,845
47.070	Collaborative Research: SHF: Small: Leveraging Satisfiability Modulo Theories for Design Synthesis and Optimization of Emerging Computing Technologies		2006407		\$164,994
47.070	CompSustNet: Expanding the Horizons of Computational Sustainability	Cornell University	72954-10597		\$64,931
47.070	Computing Innovation Fellows 2020 Project	Computing Research Association	CIF2020-SU-03		\$76,526
47.070	COVID-19 - RAPID: Pinpointing Expected Covid-19 Related Voter Turnout Problems		2031398		\$141,893
47.070	CPS: Breakthrough: Sufficient Statistics for Multi-Agent Systems		1544199		\$29,936

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
47.070	CPS: Medium: Collaborative Research: Building Information, Inhabitant, Interaction and Intelligent Integrated Modeling (BI&M)		1836995		\$106,362
47.070	CPS: Small: Collaborative Research: Information Design and Price Mechanisms in Platforms for CyberPhysical Systems with Learning Agents		1931696		\$17,128
47.070	CPS: Small: Collaborative Research: Models and System-Level Coordination Algorithms for Power-in-the-Loop Autonomous Mobility-on-Demand Systems		1837135		\$11,744
47.070	CRCNS: Collaborative Research: Naturalistic computation and signaling by neural populations in the primate retina		1430348		\$55,985
47.070	CRII: RI: Active Learning of Preferences for Human-Aware Autonomy		1849952		\$24,204
47.070	Data-driven Contact Modeling		1953008		\$123,961
47.070	E2CDA: Type I: Collaborative Research: Energy Efficient Learning Machines (ENIGMA)		1640078		\$65,577
47.070	Elements: AMR-H: Adaptive multi-resolution high-order solver for multiphase compressible flows on heterogeneous platforms		2103509		\$15,542
47.070	Emerging Frontiers Of Science Of Information	Purdue University	10000686-017		\$110,240
47.070	Enabling data accountability and governance in machine learning.		1942926		\$150,049
47.070	Expeditions: Coherent Ising Machines for Optimization, Machine Learning and Neuromorphic Computing		1918549	\$626,728	\$1,144,031
47.070	Expeditions: Collaborative Research: Global Pervasive Computational Epidemiology		1918940		\$155,901
47.070	Expeditions: Collaborative Research: Understanding the World Through Code		1918771		\$85,935
47.070	FET Core: Small: Workshop on Emerging Technologies of Post Von-Neumann Ising Machines		2139368		\$17,551
47.070	FMITF: Collaborative Research: Track I: Finding and Eliminating Bugs in Operating Systems		1918056		\$42,282
47.070	FMITF: Track II: Scaling Formal Hardware Security Verification with CheckMate from Research to Practice		2017863		\$62,961
47.070	III: Small: A System for Rapid Audiovisual Analysis of Large-Scale Video Collections		1908727		\$346,081
47.070	III: Small: Extracting Data and Structure from Charts and Graphs for Analysis, Reuse and Indexing		1714647		\$195,130
47.070	III: Small: Learning From Diverse Populations: A Complexity-Theoretic Perspective		1908774		\$22,217
47.070	NeTS: Large: Collaborative Research: GigaNets: A Path to Experimental Research in Millimeter Wave Networking		1518632		\$14,888
47.070	NeTS: Small: Massive Wireless Random Access: Principles and Protocols		1817205		\$137,108
47.070	NRI: FND: COLLAB: Distributed Semantically-Aware Tracking and Planning for Fleets of Robots		1830402		\$181,039
47.070	NSF UCSD Lambda Computing		1763256		\$209,636
47.070	NSF-BSF: AF: Small: Algorithmic Game Theory: Equilibria and Beyond		2112824		\$19,793
47.070	NSF-BSF: AF: Small: Mechanisms for Auctions and Markets - The Interplay of Incentives and Optimization		2127781		\$20,938
47.070	NSF-BSF: Large Neural Networks		1814369		\$195,987
47.070	NSF-Princeton-IRIS-HEP 136890 - Institute for Research & Innovation in Software for High Energy Physics (S212)	Princeton University	SUB0000280		\$108,963
47.070	OAC Core: Small: Enabling High-fidelity Turbulent Reacting Flows Simulations through Advanced Algorithms and High-order Methods for Extreme-scale Computing		1909379		\$70,279
47.070	Planning for the Leadership-Class Computing Facility	University of Texas at Austin	UTA20-001116		\$3,935
47.070	PPOSS: Planning: Eliminating the Bottlenecks to ML Usability and Scalability		2028602		\$203,580
47.070	Random and Adaptive Projections for Scalable Optimization and Learning	University of Michigan	SUBK00009902/PO 3005179870		\$9,946
47.070	RAPID: Collaborative Research: Computational Drug Repurposing for COVID-19		2030477		\$99,229
47.070	RI: Medium: Collaborative Research: Object-Centric Inference of Actionable Information from Visual Data		1763268		\$168,978
47.070	RI: Small: Robustness and Confidence in Machine-Learned Systems		2006777		\$66,169
47.070	RI:Medium: Collaborative Research: Incorporating Biologically-Motivated Circuit Motifs into Large-Scale Deep Neural Network Models of the Brain		1703161		\$11,025
47.070	Robotic Assistance with Dressing using Simulation-Based Optimization	Georgia Institute of Technology	AWD-100632-G1		\$66,818
47.070	RTML: Large: Collaborative: Harmonizing Predictive Algorithms and Mixed- Signal/Precision Circuits via Computation-Data Access Exchange and Adaptive Dataflows		1937294		\$100,957
47.070	RTML: Large: Continuous Adaptation for Decision Streams		1937301		\$363,327
47.070	S&CC-IRG Track 2: Smart & Connected Kids for Sustainable Energy Communities	Oregon State University	S1977A-A		\$80,912
47.070	SaTC: CORE: Frontier: Collaborative: End-to-end Trustworthiness of Machine-Learning Systems	Pennsylvania State University	S000063-NSF		\$24,167
47.070	SaTC: CORE: Frontier: Collaborative: End-to-end Trustworthiness of Machine-Learning Systems		1804222		\$366,399
47.070	SaTC: CORE: Medium: Collaborative: An algebraic approach to secure multilinear maps for cryptography		1701567		\$150,802
47.070	SCH: INT: Collaborative Research: A Non-invasive and Wearable Molecular Diagnostic Platform for Remote and Passive Monitoring of Patients at Risk for Sepsis		1722857		\$59,650
47.070	SCH:INT: A gamified mobile system for real-time mental health data modeling and personalized autism care across sociocultural settings		2014232		\$92,532
47.070	SHF: Medium: Collaborative Research: From Volume to Velocity: Big Data Analytics in Near-Realtime		1563078		\$73,666
47.070	SHF: Medium:PRISM: Platform for Rapid Investigation of efficient Scientific-computing & Machine-learning		1563113		\$77,146
47.070	SI2-SSI Collaborative Research: The SimCardio open source multi-physics cardiac modeling package		1663671		\$236,756
47.070	Spokes: MEDIUM: WEST: Breaking down barriers for reproducible neuroimaging data analyses		1760950		\$208,467
47.070	Systems for Assisting in Emotion Regulation in the Wild		1814132		\$27,744
47.070	The Stanford Data Science Collaboratory		1934578		\$955,454
47.070	TWC: Frontier: Collaborative: CORE: Center for Obfuscation Research		1414000		\$53,424
47.074	A novel integration of fine scale ecological data, high-resolution precision mapping, and regional network modeling to investigate environmental drivers of schistosomiasis dynamics		2011179		\$232,659
47.074	An experimental facility to test the impacts of multiple physical stressors on physiology, ecology and genomics of marine species		1722513		\$143,314
47.074	BIO: Determining the molecular mechanisms underlying the size-scaling of biosynthesis		2040908		\$310,631
47.074	BIOROBOOST travel support for US-based researchers to workshops to develop standards in synthetic biology		1929752		\$1,413
47.074	CAREER: Elucidating Large-Scale Spatial Patterns of Ecosystem Traits with Data Assimilation		1942133		\$45,708
47.074	CAREER: From Ecology to Neurobiology: spatial cognition in rainforest frogs		1845651	\$32,000	\$195,873
47.074	CAREER: Investigating Chromatin Dynamics Underlying Activity-Induced Neuronal Transcription Using CRISPR Technologies		2046650		\$47,759
47.074	CAREER: Investigation of a prion-based metabolic switch driven by cross-kingdom chemical communication		1453762		\$16,235
47.074	CAREER: When do mycorrhizal fungi influence plant community dynamics?		1845544		\$250,569
47.074	Center for Cellular Construction	University of California, San Francisco	125998c		\$16,731
47.074	Center for Cellular Construction	University of California, San Francisco	99078c		\$117,400
47.074	Center for Cellular Construction	University of California, San Francisco	99178c		\$104,214

**STANFORD UNIVERSITY**  
**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS**  
**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
47.074	Collaborative Proposal: MRA: Macroecology of microorganisms: Scaling fungal biodiversity from soil cores to the North American continent		1926335		\$129,571
47.074	Collaborative Research: Climate effects on Mn oxidation states in soils and Mn/SOM interactions		2027290		\$123,486
47.074	Collaborative research: defining the scope and consequences of ectomycorrhizal fungal control on forest organic matter decomposition		2021478		\$25,205
47.074	Collaborative Research: Do defenses against herbivores and pathogens drive the commonness and rarity of tropical trees at local and regional scales?		1952687		\$5,457
47.074	Collaborative Research: EAGER: Mapping small molecules in the root meristem		2028776		\$76,003
47.074	Collaborative Research: RUI: Quantifying performance in animals exposed to predictable and unpredictable variation in multiple environmental factors		1655529		\$79,343
47.074	Collaborative Research: Structural and functional connectivity of squid chromatophores		1557754	\$293	\$17,786
47.074	Collaborative Research: Systematic Investigation of the Structure, Dynamics, and Energetics of Hydrogen Bonds and the Protein Interior Using Ketosteroid Isomerase and Model Systems		1714723		\$280,221
47.074	Collaborative Research: Uncovering the Biophysical Mechanisms of Single-cell Wound-healing		1938109		\$169,579
47.074	Connecting cell fate and epigenome drift through physical models of chromatin structure and dynamics	University of California, Irvine	2020-1358		\$120,655
47.074	Cytokinesis without an actomyosin ring: studies in Chlamydomonas		1818383	\$156,772	\$203,261
47.074	Determining the function of sterol lipids in the bacterial domain		1919153		\$231,191
47.074	Developmental Consequences of Sexual Conflict on Female Brain Cognition	University of Texas at Austin	UTA21-000022		\$795
47.074	Dimensions: Collaborative Research: Assembly and function of nectar microbial communities		1737758		\$251,077
47.074	Dissecting the biogenesis and function of circular RNA in simple eukaryotes		1552196		\$126,436
47.074	EDGE CT: Developing transgenic and lineage tracing tools in planarians		1923534	\$23,011	\$157,813
47.074	EDGE: Developing techniques for linking genotype to phenotype in amphibians		1827333	\$136,644	\$379,260
47.074	Effects of temperature on vector-borne disease transmission: Integrating theory with empirical data		1518681	\$185,510	\$186,417
47.074	FMRG: Genetically-targeted chemical assembly (GTCA) of functional structures in living cells, tissues, and animals		2037164		\$385,331
47.074	Hemichordate neural organization: generating neural system diversity from conserved molecular patterning		1656628		\$175,261
47.074	How land use change transforms the landscape of vector-borne disease		2011147		\$126,805
47.074	Molecular mechanisms that boost systemic immunity in plants		2026368		\$60,354
47.074	MTM 1: The sandy beach microbiome: physical, chemical and biological controls on diversity and function		2024504		\$12,972
47.074	NeuroNex Technology Hub: Integrated Circuit Cracking (ICC) with Linked Tools for Diverse Systems		1707261	\$346,306	\$2,563,636
47.074	NeuroNex: Enabling Identification and Impact of Synaptic Weight in Functional Networks	University of Texas at Austin	UTA20-000889		\$236,486
47.074	NSF2026: EAGER: Material morphogenesis using biohybrid vesicles as building blocks		2033387		\$60,289
47.074	NSF-IO: Natural selection on the social interactions that mediate collective behavior: ecological pressures and genomic architecture		1940647		\$83,040
47.074	Organization and Dynamics in Photosynthetic Reaction Centers and Model Membrane Architectures		1915727		\$374,286
47.074	Physiological adaptations for a deadly diet: Bioaccumulation mechanisms of defensive chemicals in a poison frog		1822025		\$282
47.074	RCN-UBE Incubator: Building the San Francisco Bay Network for Student Opportunities in Avian Research (SOAR) to enhance STEM education and assess urban impacts on avian ecology		2017935	\$5,076	\$34,272
47.074	RCN-UBE Incubator: Diversifying and Integrating Marine Education at Stations along a latitudinal gradient		2018116		\$48,124
47.074	RoL: Regulation of cell envelope homeostasis in the alpha-proteobacterium Sinorhizobium meliloti		2015870		\$473,422
47.074	Scaling from cell physiology to community stability in a natural gut microbiome	Carnegie Institution of Washington	05-10995-02		\$43,557
47.074	SemiSynBio: Highly scalable random access DNA data storage with nanopore-based reading		1807371		\$332,014
47.074	Structural Dynamics of Ribosome Complexes By Using Time-resolved Serial Femtosecond X-ray Kinetic Crystallography	Hauptman-Woodward Medical Research Institute	6229		\$112,118
47.074	The Role Of Non-Coding Rna In The Modulation Of Anther & Pollen Development In Grasses	Donald Danforth Plant Science Center	23908-S		\$429,990
47.074	Unraveling biofilm matrix composition, architecture, and function		2001189		\$224,313
47.075	161808_Frank_REU Site: Language, Cognition and Computation		1950223		\$67,479
47.075	180743 NSF Learning systems that enable healthcare workers to perfect safety-critical hospital work		2026498		\$374,757
47.075	199612 - NSF Career - GWP - CAREER: Understanding the Drivers and Consequences of Personal Adaptation Behavior to Environmental Extremes		2045129		\$2,470
47.075	Advancing the Science of Organizations: Work and workshops coordinated with the CASBS Summer Institute on Organizations and Their Effectiveness		2122556		\$48,711
47.075	ANES WEB: American National Election Studies 2018-2021		1835022	\$1,489,192	\$2,089,164
47.075	Anticipatory Affect And Financial Risk Taking		BCS-0748915		-853
47.075	Auction Design for Complex Centralized Markets		1947514		\$74,686
47.075	CAREER: Building Empathy through Social Psychological Processes		1454518		\$39,327
47.075	CAREER: Computational work design: How algorithms and crowdsourcing are changing organizational design and worker experience		1847091		\$104,707
47.075	CAREER: Empirical Studies of Cities' and Neighborhoods' Influence on Income and Consumption Inequality: Research and Training	National Bureau of Economic Research	36344.00.00.00.7700		\$23,655
47.075	Central Banks in Uncharted Waters: Navigating a World with Large Reserves		2018177		\$124,258
47.075	CHN2-S: Measuring adaptive responses that strengthen governance of marine resources along the Baja California Peninsula	Duke University	333-2698		\$52,158
47.075	Collaborative Research: High-Performance Computational Standards For Redistricting		1728902		\$40,953
47.075	Collaborative Research: Modeling the Invention, Dissemination, and Translation of Scientific Concepts		1829240		-\$285
47.075	Collaborative research: Time transect of ancient genomes of Indigenous North Americans		2017956		\$47,106
47.075	Collaborative Research: Time-Sharing Experiments for the Social Sciences (TESS): Proposal for Renewed Support, 2020-2023		2017464		\$61,461
47.075	Collaborative Research: Transparency and Misspecification in Structural Estimation		1949066		\$211
47.075	Computer-intensive inference with applications to social sciences		1949845		\$116,006
47.075	COVID-19 - 216360 NSF Conference - Collaborative Research: Predictive Intelligence for Pandemic Prevention, Theme 4: Social, Behavioral, and Policy Obstacles and Supports		2118926		\$33,952
47.075	COVID-19 - Collaborative Research: The Intergenerational Effects of COVID-19		2049529		\$30,892
47.075	COVID-19 - RAPID: Compounding crises: Facing hurricane season in the era of COVID-19		2030139		-\$64,947
47.075	COVID-19 - RAPID: Compounding crises: Facing hurricane season in the era of COVID-19		2030139	\$60,125	\$60,125
47.075	COVID-19 - RAPID: Coupled Contagion, Behavior-Change, and the Dynamics of Pro- and Anti-Social Behavior During the COVID-19 Pandemic		2028160		\$197,292
47.075	COVID-19 - RAPID: Online Social Networks, Relationships, and the COVID-19 lock down		2030593		\$46,219

**STANFORD UNIVERSITY**  
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**PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM**  
**YEAR ENDED AUGUST 31, 2021**

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47.075	COVID-19 - RAPID: Using remote diary methods to understand how families navigate emergency-driven homeschooling driven by COVID19		2028082		\$123,348
47.075	Cross-cultural trust and resource sharing: The Role of Ideal Affect		1732963		\$49,692
47.075	Developing an Ethics and Society Review for Research		2124734		\$14,363
47.075	Doctoral Dissertation Research: Automated Cognitive Behavioral Therapy and the Treatment of Depression		BCS-1917569		\$8,837
47.075	Doctoral Dissertation Research: Between Disasters; Planning Flood Resilient Infrastructure in Houston		1947411		\$8,558
47.075	Doctoral Dissertation Research: Silent, distrusted, or disliked: How speaking out against sexual harassment leads women to be negatively stereotyped and discriminated against.		2001736		\$3,331
47.075	Doctoral Dissertation Research: Why Do Ethnic Parties Flourish or Die? The Microfoundations of Identity Politics in Pakistan's Megacity		1746524		\$22,373
47.075	Emotion as information: Young children's use of others' emotional expressions to guide their inference and exploration		2019567		\$197,004
47.075	Global Urbanization and its Discontents: Wide View	Southern Methodist University	G001723-7505		\$35,378
47.075	IBSS-L: Recruiting, Hiring, and Retaining Math and Science Teachers		1620419	\$24,092	\$123,889
47.075	Influencing Conflict-Related Emotional Dynamics		1823410	\$84,638	\$121,102
47.075	Intracranial EEG and Direct Cortical Stimulation Study of Stimulus-Driven and Cognitively-Modulated Emotional Processing in the Human Brain		1850938		\$126,238
47.075	Krossnick Berent NSF		1751723	\$41,340	\$78,974
47.075	Neural investigations of face perception and attention using population receptive field modeling		1756035		\$106,867
47.075	NSF Asylum Seeker and Refugee Integration in Europe		1627339		\$56,560
47.075	NSF CAREER: Foundational Questions in the Theory of Incentives		1846575		\$102,294
47.075	NSF CAREER: The Effects of Public Policy on Families with Children: New Evidence from Multiple Large-Scale Data Sets		1752203		\$70,955
47.075	NSF Career: Within City, Across Seasons or Across Borders: The Economics of Labor Movements		1753002		\$49,873
47.075	Radiocarbon Dating and Chronological Modelling of Neolithic athlyk East		1546797		\$16,224
47.075	Religion Under the Skin: How Does Christian Prayer Become Embodied? 2019		1851221		\$8,672
47.075	RIDIR: Integrated Media Database and Computational Tools for Multimodal Analysis of Inter-media News Flow and Agenda Setting in Mass and Social Media		1831481		\$51,413
47.075	SABLE: Sensor-based Assessment of Behavioral Lifestyles and Experiences	University of Texas at Austin	UTA18-001155		\$105,659
47.075	SCISIPBIO: Can consultation create a fairer scientific peer-review process?		2022435		\$60,468
47.075	Standard Grant: Glass Ceilings to Diversity		1827477		\$227,388
47.075	The Cultural Life of Communism in Kerala		1460012		\$5,008
47.075	The Welfare Effects of E-Commerce and Entry in U.S. Retail		1729395		\$6,570
47.075	Theoretical and Empirical Investigations of the Dynamics of Homophily and its Impact on Students' Achievement, Decisions, and Well-Being		2018554		\$129,075
47.076	189800 NSF GRFP BENT DGE-1656518 Graduate Research Fellowship Project		1656518		\$20,037,303
47.076	189800 NSF GRFP BENT DGE-2146755 Graduate Research Fellowship Project		2146755		\$497,907
47.076	A Belonging Intervention to Improve STEM Outcomes for Underrepresented Students: A Randomized-Controlled Trial at 22 Colleges	Indiana University	BL-4831221-SU / PO 0097565		\$39,641
47.076	BIGDATA: F: BCC: Data driven optimization of classroom learning activities	University Of Washington	UWSC10355 / BPO 29468		\$5,841
47.076	California Alliance for Graduate Education and the Professoriate-II	University of California, Berkeley	00009415		-\$25
47.076	Collaborative Research: A Partnership to Adapt, Implement and Study a Practice-based Professional Learning Model and Build District Capacity to Meet the Challenges of NGSS		1720930		\$275,628
47.076	Collaborative Research: Advancing Ocean Literacy through Immersive Virtual Reality		1906728		\$19,751
47.076	Collaborative Research: NGSS Science and Engineering Practices and English Language Learners		1502507		\$12,220
47.076	Collaborative Research: NSF INCLUDES Alliance: STEM Core Expansion	Saddleback College	SC-SUB-G1300		\$141,751
47.076	Collaborative Research: Scaling the Early Research Scholars Program		1821449		\$43,365
47.076	Collaborative Research: Supporting Rural Paraprofessional Educators and their Students with Computer Science Professional Learning and Expansively Framed Curriculum		2031404		\$61,388
47.076	Creating a new assessment tool for quantitative critical thinking in introductory lab courses		1611482	\$9,448	\$9,448
47.076	Facilitating Teacher Learning with Video Clips of Instruction in Science	Florida State University	R000002770		\$11,537
47.076	NCS-FO: Integrated neurocognitive process models of individual differences in children's math problem solving strategies, learning and development		2024856		\$117,103
47.076	NRT: NeuroTech - Bringing Technology to Neuroscience		1828993		\$561,899
47.076	Partnerships to support improvement in middle school mathematics	University of California, Riverside	S-001181		\$94,579
47.076	Reducing Attrition in STEM Doctoral Education: A Longitudinal Investigation using Momentary Assessment and Social Psychological Intervention.	Pennsylvania State University	5664-SU-NSF-1214		\$24,322
47.076	Refining a Model with Tools to Develop Math PD Leaders: An Implementation Study		1417261		\$15,562
47.076	SPO 173417: Collaborative Research: AGEPT TRANSFORMATION ALLIANCE: RESEARCH EXCHANGE		2015049		\$97,726
47.078	211941 Arrigo-Courtney Payne NSF Doctoral Dissertation Research: Determining the functional relationship between simultaneous co-limiting light and nutrient conditions on phytoplankton growth		2112976		\$412
47.078	How much does nest density matter? Using novel technology to collect whole-colony data on Adelie penguins	Point Blue Conservation Science	AW864573		\$21,925
47.079	IRES Track I: US-CERN Summer Program on ATLAS Experiment of LHC at CERN for the California State University System	California State University, Fresno Foundation	SC360452-19-01 / PO #57699		\$27,546
47.079	SII Planning Grant: National Center for Radio Spectrum Innovations (NCRSI)	University of Notre Dame	203949SU		\$6,318
47.079	Stanford-Colombia Collaboratory on Chronic Disease Prevention	CRDF Global	OISE-19-66188-1		\$14,858
47.083	A multi-scale open knowledge network for precision medicine	University of California, San Francisco	12431sc		\$69,112
47.083	Center for Dark Energy Biosphere Investigations (C-DEBI)	University of Southern California	66468074/PO# 10392717		\$75,133
47.083	GCR: Collaborative Research: The Convergent Impact of Marine Viruses, Minerals, and Microscale Physics on Phytoplankton Carbon Sequestration		2020980		\$20,119
47.083	NSF Convergence Accelerator - Track D: ImageQ: Asynchronous and Decentralized Federated Learning for Medical Imaging	University of Iowa	So2005-01		\$100,000
47.083	NSF Convergence Accelerator Track C: Interconnecting Quantum Computers for the Next-Generation Internet	University of Maryland	93599-Z3687201		\$32,356
47.083	Stanford-AI4ALL summer camp	AI4ALL	1(GG015653)-SU		\$142,961
<b>The Institute of Museum and Library Services</b>					<b>\$13,523</b>
45.301	SUAC Inventory Project (Conservation)		MA- 245521-OMS-20		\$13,523
<b>United States Agency for International Development</b>					<b>\$929,149</b>
98.001	Examining the Utility of Satellite-based Assessments in a Maize/Peanut Agroecosystem for Estimated Crop Response and Aflatoxin Contamination Levels in Dry Land and Irrigated Fields in Malawi	North Carolina State University	2019-1691-01		\$30,315
98.001	USAID Funded Counter Gender-Based Violence (C-GBV).	University Of Washington	UWSC11773; BPO 47163		\$17,170
98.001	USAID W&M Bureau for Food Security	College of William and Mary in Virginia	740681-74171D		\$500,593

STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM  
YEAR ENDED AUGUST 31, 2021

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
98.837	Clinical Microfluidic Assessment of Red Blood Cell Adhesion, Deformability, Cellular Hemoglobin Distribution, Cellular Density, and Blood Rheology for Curative Therapies in Sickle Cell Disease	Case Western Reserve University	RES515114		\$144,270
98.853	Targeting GPCRs in amygdalar and cortical neural ensembles to treat pain aversion	University of North Carolina at Chapel Hill	5119107		\$239,731
98.RD	System-scale planning to support sustainable energy systems and conservation of freshwater resources for people and nature	World Wildlife Fund, US	WQ84		\$2,310
98.RD	Tailoring Contract Farming to Smallholders: Experimental Evidence on Enrollment Impact, Insurance Provision, and Communication Technologies	University of California, Davis	201121454-10	-\$5,240	-\$5,240
<b>United States Environmental Protection Agency</b>					<b>\$72,266</b>
66.034	Energy Modeling Forum Research Program on Energy and Integrated Assessment Modeling		83998801		\$44,308
66.509	SEARCH: Solutions for Energy, Air, Climate and Health	Yale University	GK000293 (CON-80000095)		\$9,600
66.516	Electro-Assisted Wastewater Nutrient Recovery		84015101		\$18,358

STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM  
YEAR ENDED AUGUST 31, 2021

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
<b>Other Federal Awards</b>					<b>\$3,945,161</b>
<b>Department of Defense</b>					<b>\$22,183</b>
12.900	STARTALK Teacher: Stanford University Teacher Leadership Seminar		H98230-20 -1-0175		\$22,183
<b>Department of Education</b>					<b>\$1,573,173</b>
84.015A	National Resource Centers and Foreign Language and Area Studies Fellowships		P015A180042		\$223,665
84.015A	National Resource Centers and Foreign Language and Area Studies Fellowships		P015A180145		\$155,880
<b>Total for Program</b>					<b>\$379,545</b>
84.015B	National Resource Centers and Foreign Language and Area Studies Fellowships		P015B180042		\$340,941
84.015B	National Resource Centers and Foreign Language and Area Studies Fellowships		P015B180145		\$256,550
<b>Total for Program</b>					<b>\$597,491</b>
84.305B	IES FY 2014 Predoctoral Training		R305B140009		\$525,464
84.367A	Stanford World Language Project ESSA 2020-2021	University of California Office of the President	ESSA20-CWLP-STANFORD		\$70,673
<b>Department of Energy</b>					<b>\$2,023</b>
81.U01	Next Generation Printable and Low Power Flexible Organic Transistors based on the Electric Double-Layer Capacitance Effect and Active Layer Blending		130432		\$2,023
<b>Department of Health &amp; Human Services</b>					<b>\$985,241</b>
93.084	Prevention Policy Modeling Lab		19NU38FS004651	\$287,162	\$758,554
93.268	Improving implementation of immunization practice standards by national pharmacy and organizations - Phase I Needs Assessment Survey	Auburn University	20-PHAR-201329-Stanford		\$28,621
93.958	Cognitive Behavioral Therapy for Psychosis (CBTp) Training for ETCH: Extended Consultation & Train the Trainer	Network180	AW802488		\$12,663
93.U02	Constructing Support for California Tribe Efforts on Suicide Prevention		75H70319P00042	\$68,118	\$185,403
<b>Department of State</b>					<b>\$846,815</b>
19.703	Afghanistan Legal Education-Refining & Expanding AUAF Law Program		SINLEC18GR2013	\$421,404	\$846,815
<b>Department of the Interior</b>					<b>\$26,122</b>
15.933	Office of Redress Administration (ORA) Oral History Project		P18AP00198		\$26,122
<b>Library of Congress</b>					<b>\$152,777</b>
42.002	Teaching with Primary Sources		GA 09C0053		\$152,777
<b>National Archives &amp; Records Administration</b>					<b>\$132,247</b>
89.003	Martin Luther King, Jr., Papers Project		PE-103044-20		\$132,247
<b>National Endowment for the Humanities</b>					<b>\$123,836</b>
45.161	Papers of Martin Luther King, Jr.		RQ-266072-19		\$123,836
<b>The Institute of Museum and Library Services</b>					<b>\$74,358</b>
45.301	Stanford University Archaeology Collections Inventory Project		MA-30-18-0282-18		\$37,275
45.312	Lighting the Way: illuminating the future of discovery and delivery for archives		LG-35-19-0012-19		\$37,083
<b>United States Environmental Protection Agency</b>					<b>\$6,386</b>
66.950	ee360 Leadership and Training Collaborative: Building a Stronger and More Inclusive Movement (year 3)	North American Association for Environmental Education	124668		\$6,386



STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART A - AWARD EXPENDITURES BY FEDERAL PROGRAM  
YEAR ENDED AUGUST 31, 2021

Federal Grantor / Assistance Listing Number	Federal Program Name	Name of Pass-through Entity	Pass-Through Entity Identifying Number/ Additional Award Identification	Amount Passed Through to Subrecipients	Total Federal Expenditures
<b>Student Financial Assistance Cluster</b>					<b>\$66,814,909</b>
<b>Department of Education</b>					<b>\$8,537,007</b>
84.007	SEOG FY19-20		P007A190619		-\$253,526
84.007	SEOG FY20-21		P007A200619		\$1,451,952
84.033	189774 FWS FY20-21		P033A200619		\$892,099
84.033	189774 FWS FY21-22		P033A210619		\$183,797
84.033	FWS FY18-19		P033A180619		-\$1,200
84.033	FWS FY19-20		P033A190619		\$255,947
84.063	189772 PELL FY19-20		P063P191187		\$23,812
84.063	189772 PELL FY20-21		P063P201187		\$5,799,690
84.379	TEACH: Teacher Education Assistance for College and Higher Education		P379T221187		\$184,436
<b>Department of Education (Loans and Loan Programs)</b>					<b>\$58,237,806</b>
84.038	Department of Education - Federal Perkins Loan Program - Administrative Allowance		N/A		\$0
84.038	Department of Education - Federal Perkins Loan Program - New Loans Issued		N/A		\$0
84.038	Department of Education - Federal Perkins Loan Program - Outstanding Balance as of 9/1/2020		N/A		\$17,900,794
84.268	Department of Education - Federal Direct Student Loan Program - PLUS Loans - Graduate and Parent - New Loans Issued		N/A		\$21,433,095
84.268	Department of Education - Federal Direct Student Loan Program - Subsidized Stafford Loans - New Loans Issued		N/A		\$287,429
84.268	Department of Education - Federal Direct Student Loan Program - Unsubsidized Stafford Loans - New Loans Issued		N/A		\$18,616,488
<b>Department of Health and Human Services (Loans and Loan Programs)</b>					<b>\$40,096</b>
93.342	Department of Health and Human Services - Health Professions Student Loans		N/A		\$0
93.342	Department of Health and Human Services - Loans for Disadvantaged Students - New Loans Issued		N/A		\$0
93.342	Department of Health and Human Services - Loans for Disadvantaged Students - Outstanding Balance as of 9/1/2020		N/A		\$40,096
<b>Total Federal Expenditures</b>					<b>\$74,103,268</b>
					<b>\$882,479,078</b>

**Schedule of Expenditures of Federal Awards**  
**Part B, Federal Loan Program Year End Balances**

STANFORD UNIVERSITY  
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS  
PART B - FEDERAL LOAN PROGRAMS YEAR END BALANCES  
Year Ended 8/31/2021

Federal Grantor/CFDA Number	Federal Program Name	Outstanding Loan Balance as of 08/31/2021
<b>Department of Education</b>		
84.038	Federal Perkins Loan Program - Outstanding Balance	\$12,125,463
<b>Department of Health and Human Services</b>		
93.342	Loans for Disadvantaged Students - Outstanding Balance	\$31,086
<b>Total</b>		<b>\$12,156,549</b>

# **Stanford University**

## **Notes to the Schedule of Expenditures of Federal Awards**

### **Year Ended August 31, 2021**

#### **1. Basis of Presentation**

The accompanying Schedule of Expenditures of Federal Awards (the "Schedule") Part A, Award Expenditures by Federal Program, Part B, Federal Loan Program Year End Balances, has been prepared in accordance with the requirements of Title 2 U.S. Code of Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance). Therefore, amounts presented in the Schedule may differ from amounts presented in, or used in the preparation of, Stanford University's ("Stanford") financial statements, as they relate to the various federal loan programs, as well as other awards. The purpose of the Schedule is to present a summary of those activities by Stanford for the year ended August 31, 2021, that have been financed by the U.S. Government ("federal awards").

Consistent with the provisions of Uniform Guidance, the Schedule does not include expenditures of SLAC National Accelerator Laboratory that was funded by Department of Energy ("DOE") contract. SLAC National Accelerator Laboratory, a national laboratory operated and managed by Stanford under contract directly with DOE, represents a government-owned, contractor operated ("GOCO") facility. GOCOs are excluded from the provisions of the Uniform Guidance. The Schedule does not include federal expenditures of Stanford Health Care and Lucille Packard Children's Hospital because a discrete schedule of expenditures in accordance with Uniform Guidance is issued for these entities.

Stanford applies its predetermined approved facilities and administrative rate when charging indirect costs to federal awards rather than the 10% de minimis cost rate as described in Section 200.414 of Uniform Guidance.

The accompanying Schedule has been prepared on the accrual basis of accounting, which is consistent with Stanford's financial statements. Assistance Listing Numbers and pass-through numbers are provided when available. Negative amounts presented as expenditures represent subsequent period adjustments, transfers, or vendor credits.

#### **2. Loan Programs**

The federal student loan programs listed in the Schedule are administered directly by the University and balances and transactions relating to these programs are included in Stanford's consolidated financial statements. Included within the Schedule Part A are the loan beginning balances, new loans and administrative cost allowances from the Perkins Loans Program and Loans for Disadvantaged Students. Included within the Schedule Part B are the loan balances for the year ended August 31, 2021.

#### **3. Programs Excluded from Subpart F- Audit Requirements**

Included in the Schedule Part A, Award Expenditures by Federal Program, is the Education Research Training grant, Assistance Listing Number 84.305B, from the U.S. Department of Education; with \$525,464 total expenditures. This grant is excluded from audit requirements under Subpart F of Title 2 U.S. Code of Regulations Part 200.

## **II. Internal Control and Compliance**



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

To The Board of Trustees of the Leland Stanford Junior University

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the consolidated financial statements of The Leland Stanford Junior University and its subsidiaries ("Stanford"), which comprise the consolidated statement of financial position as of August 31, 2021 and the related consolidated statements of activities and cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated December 1, 2021.

### **Internal Control Over Financial Reporting**

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

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

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

### **Compliance and Other Matters**

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

**Purpose of this Report**

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

*PricewaterhouseCoopers LLP*

San Francisco, CA  
December 1, 2021



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

To The Board of Trustees of the Leland Stanford Junior University

**Report on Compliance for Each Major Federal Program**

We have audited The Leland Stanford Junior University and its subsidiaries' ("Stanford") compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of Stanford's major federal programs for the year ended August 31, 2021. Stanford's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

Stanford's consolidated financial statements include the operations of Stanford Health Care and Lucile Packard Children's Hospital, which are not included in Stanford's schedule of expenditures of federal awards during the year ended August 31, 2021. Our audit, described below, did not include the operations of Stanford Health Care and Lucile Packard Children's Hospital because discrete reports in accordance with Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) are issued for these entities.

***Management's Responsibility***

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

***Auditors' Responsibility***

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

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





### ***Opinion on Each Major Federal Program***

In our opinion, The Leland Stanford Junior University and its subsidiaries complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended August 31, 2021.

### ***Other Matters***

The result of our auditing procedures disclosed an instance of noncompliance, which is required to be reported in accordance with the Uniform Guidance and which is described in the accompanying schedule of finding and questioned cost as item 2021-001. Our opinion on each major federal program is not modified with respect to this matter.

Stanford's response to the noncompliance finding identified in our audit is described in the accompanying corrective action plan. Stanford's response was not subjected to the auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response.

As indicated in Section I to the accompanying Schedule of Findings and Questioned Costs, we have audited the Student Financial Assistance cluster as a major program. Also, as indicated in the first paragraph of this report, we performed our audit of compliance using the compliance requirements contained in the OMB Compliance Supplement, including those contained in Part V 5.3, Compliance Requirement N, Special Tests and Provisions, Section 10 "Gramm-Leach-Bliley Act-Student Information Security." This section includes three suggested audit procedures with respect to verification that the institution (1) designated an individual to coordinate the information security program, (2) performed a risk assessment that addresses the three required areas in 16 CFR 314.4(b), and (3) documented a safeguard for each risk identified. Our procedures in relation to these three items were limited to inquiry of and obtaining written representation from management and obtaining and reading management's documentation related to these three items. Our procedures did not include an analysis of the adequacy or completeness of the risk assessment performed or the safeguards for each risk identified by management.

### ***Report on Internal Control Over Compliance***

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

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



*internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

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

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

*PricewaterhouseCoopers LLP*

San Francisco, CA

May 17, 2022

### **III. Findings**

**Stanford University**  
**Schedule of Findings and Questioned Costs**  
**August 31, 2021**

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**Section I – Summary of Auditor’s Results**

Material weakness(es) identified?	No
Significant deficiency(ies) identified that are not considered to be material weaknesses?	None reported
Noncompliance material to financial statements noted?	No

***Federal Awards***

Internal control over major programs:

Material weakness(es) identified?	No
Significant deficiency(ies) identified that are not considered to be material weaknesses?	None reported

Type of auditor’s report issued on compliance for major programs:

Unmodified

Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?

Yes

Identification of major programs:

**CFDA Number(s)**

**Name of Federal Program or Cluster**

Various

Research and Development Cluster

Various

Student Financial Assistance Cluster

Dollar threshold used to distinguish between Type A and Type B programs:

\$3,000,000

Auditee qualified as low-risk auditee?

Yes

**Stanford University**  
**Schedule of Findings and Questioned Costs**  
**August 31, 2021**

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**Section II – Financial Statement Findings**

None noted.

**Stanford University**  
**Schedule of Findings and Questioned Costs**  
**August 31, 2021**

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**Section III – Findings and Questioned Costs for Federal Awards**

**Finding 2021-001 – Entrance Counseling not Completed Prior to Disbursing Direct Loans**

**Cluster/Grantor:** Student Financial Assistance/Department of Education

**Award Name:** Federal Direct Student Loans

**Award Year:** September 1, 2020 – August 31, 2021

**Award Number:** N/A

**Assistant Listing Number:** 84.268

**Criteria**

Under the Federal Direct Student Loan programs, a school must ensure that entrance counseling is conducted with each Direct Subsidized Loan, Direct Unsubsidized Loan or graduate or professional student Direct PLUS student borrower prior to making the first disbursement of the proceeds of a loan to a student borrower unless the student borrower has received a prior Direct Subsidized Loan, Direct Unsubsidized Loan, Subsidized or Unsubsidized Federal Stafford Loan, Federal SLS Loan or Direct PLUS Loan or student Federal PLUS Loan. (34 CFR 685.304 (a-b))

**Condition**

We selected a sample of 60 students to test federal student financial aid disbursements and noted one instance where the financial aid recipient did not receive entrance counseling prior to the first disbursement of their direct loan. For this exception, the student received \$20,284 in direct unsubsidized loan funds and \$116,271 direct plus loan funds.

**Cause**

We understand the identified instance of required entrance counseling was missed due to a PeopleSoft configuration issue in fiscal 2021, which did not appropriately identify the status of entrance counseling completion.

**Effect**

Student aid could have been disbursed to student borrowers who did not understand the responsibilities associated with receiving student loans.

**Questioned Costs:** \$136,555

**Recommendation**

We recommend Stanford evaluate its systematic controls and processes to ensure all students requiring entrance counseling under the regulations are identified and receive counseling prior to any applicable disbursements being made.

**Management's Views and Corrective Action Plan**

Management's views and corrective action plan are included at the end of this report after the Summary Schedule of Prior Audit Findings.

**Stanford University**  
**Summary Schedule of Prior Audit Findings**  
**August 31, 2021**

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There are no findings from prior years which require an update in this report.

STANFORD  
UNIVERSITY



*Office of Research Administration*

May 17, 2022

Ladies and Gentlemen,

As required by Uniform Guidance compliance requirements (2 CFR part 220), we have provided below our response and corrective action plan addressing the finding in the "Reports on Consolidated *Financial Statements and Federal Award Programs in Accordance with OMB Uniform Guidance for the year ended August 31, 2021*".

**Response and Corrective Action Plans**

**1. Finding 2021-001 - SFA Cluster: Entrance Counseling not Completed Prior to Disbursing Direct Loans**

Stanford agrees with the finding and recommendation. The following action plan has been implemented by the Financial Aid Office (FAO) at the Graduate School of Business (GSB):

- a. In November 2021, the trigger definition in the PeopleSoft system was reconfigured to ensure that the loan entrance counseling requirement is assigned to all students with federal Direct loans in either "offered" or "accepted" status.
- b. The Director of Financial Aid at GSB will ensure going forward that system settings are in place to confirm completion of loan entrance counseling for each borrower prior to disbursement of federal loan funds.

I will be responsible for ensuring that the corrective actions are accomplished. If you have any questions, please contact me at (650) 723-9102 or e-mail me at [vgopal@stanford.edu](mailto:vgopal@stanford.edu).

Sincerely,

*Vrinda Gopal*

Vrinda Gopal  
Sr. Director, Research Administration Policy and Compliance  
Office of Research Administration

cc:

G. Russell Brewer, Associate Vice President of Research Administration, Stanford University  
Anne Sweeney, Senior Associate Vice President of Finance, Stanford University  
Raina Rose Tagle, Senior Associate Vice President and Chief Risk Officer, Stanford University



Karen Cordeiro, Controller, Stanford University

Karen Cooper, Associate Dean and Director of Financial Aid, Stanford University

Jeff Shelby, Director of Compliance and Technology, Financial Aid Office, Stanford University

Will Cobb, Partner, PricewaterhouseCoopers LLP

Beth Snyder, Contracting Officer, Office of Naval Research