

University of Pennsylvania

Philadelphia, Pennsylvania

Reports on Federal Awards in

Accordance with OMB Uniform Guidance

June 30, 2023

Federal Entity Identification

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**University of Pennsylvania
Reports on Federal Awards in
Accordance with OMB Uniform Guidance
Index
June 30, 2023**

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I. Financial



Report of Independent Auditors

To the Trustees of the University of Pennsylvania

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the accompanying consolidated financial statements of the University of Pennsylvania and its subsidiaries (the “University”), which comprise the consolidated statements of financial position as of June 30, 2023 and 2022, and the related consolidated statements of activities and of cash flows for the years then ended, including the related notes (collectively referred to as the “consolidated financial statements”).

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the University as of June 30, 2023 and 2022, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (US GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors’ Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are required to be independent of the University and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management 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, and for 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.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the University’s ability to continue as a going concern for one year after the date the financial statements are issued.



Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with US GAAS and *Government Auditing Standards*, will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with US GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the consolidated financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the University's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Supplemental 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 June 30, 2023, 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. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the 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 September 28, 2023, on our consideration of the University'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 June 30, 2023. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the University's internal control over financial reporting and compliance.

PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania
September 28, 2023

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

University of Pennsylvania
(in thousands)

| | June 30, | |
|---|----------------------|----------------------|
| | 2023 | 2022 |
| ASSETS | | |
| Cash and cash equivalents | \$ 3,217,099 | \$ 3,163,942 |
| Accounts receivable, net | 1,816,464 | 1,925,027 |
| Contributions receivable, net | 447,413 | 513,788 |
| Loans receivable, net | 53,022 | 59,809 |
| Other assets | 1,244,642 | 1,011,588 |
| Investments, at fair value | 23,090,536 | 22,484,283 |
| Property, plant and equipment, net | 9,463,058 | 9,391,124 |
| TOTAL ASSETS | \$ 39,332,234 | \$ 38,549,561 |
| LIABILITIES | | |
| Accounts payable | \$ 388,701 | \$ 393,273 |
| Accrued expenses and other liabilities | 4,065,419 | 3,847,063 |
| Deferred income | 189,706 | 200,658 |
| Deposits and advances | 217,594 | 234,653 |
| Federal student loan advances | 32,756 | 39,894 |
| Accrued retirement benefits | 290,669 | 466,605 |
| Debt obligations | 4,393,519 | 4,492,228 |
| TOTAL LIABILITIES | 9,578,364 | 9,674,374 |
| NET ASSETS | | |
| Without donor restrictions | 18,814,722 | 17,808,212 |
| With donor restrictions | 10,939,148 | 11,066,975 |
| TOTAL NET ASSETS | 29,753,870 | 28,875,187 |
| TOTAL LIABILITIES AND NET ASSETS | \$ 39,332,234 | \$ 38,549,561 |

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

CONSOLIDATED STATEMENTS OF ACTIVITIES

University of Pennsylvania
for the years ended June 30, 2023 and 2022
(in thousands)

| | 2023 | 2022 |
|---|----------------------|----------------------|
| WITHOUT DONOR RESTRICTIONS: | | |
| REVENUE AND OTHER SUPPORT | | |
| Tuition and fees, net | \$ 1,361,445 | \$ 1,310,603 |
| Commonwealth appropriations | 36,740 | 35,144 |
| Sponsored programs | 1,333,422 | 1,270,036 |
| Contributions and donor support | 239,165 | 210,892 |
| Investment income | 1,121,483 | 873,500 |
| Net patient service revenue | 8,718,133 | 8,094,673 |
| Other income | 2,182,485 | 2,632,107 |
| TOTAL REVENUE AND OTHER SUPPORT | 14,992,873 | 14,426,955 |
| EXPENSES | | |
| Compensation and benefits | 7,742,714 | 7,209,286 |
| Depreciation and amortization | 650,251 | 623,457 |
| Interest on indebtedness | 139,741 | 127,997 |
| Other operating expenses | 5,324,442 | 4,807,895 |
| TOTAL EXPENSES | 13,857,148 | 12,768,635 |
| INCREASE IN NET ASSETS FROM OPERATIONS | 1,135,725 | 1,658,320 |
| NONOPERATING ACTIVITIES | | |
| Return on investments, net of amounts classified as operating revenue | (472,278) | (662,663) |
| Pension, OPEB and other, net | 204,662 | 854,025 |
| Contributions and donor support for capital related activities | 138,401 | 54,603 |
| TOTAL NONOPERATING ACTIVITIES | (129,215) | 245,965 |
| INCREASE IN NET ASSETS WITHOUT DONOR RESTRICTIONS | 1,006,510 | 1,904,285 |
| WITH DONOR RESTRICTIONS: | | |
| Contributions | 450,788 | 582,712 |
| Return on investments, net | 175,674 | 3,302 |
| Net assets released from restrictions | (754,289) | (564,182) |
| (DECREASE) INCREASE IN NET ASSETS WITH DONOR RESTRICTIONS | (127,827) | 21,832 |
| INCREASE IN TOTAL NET ASSETS | 878,683 | 1,926,117 |
| Total net assets, beginning of year | 28,875,187 | 26,949,070 |
| TOTAL NET ASSETS, END OF YEAR | \$ 29,753,870 | \$ 28,875,187 |

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

CONSOLIDATED STATEMENTS OF CASH FLOWS

University of Pennsylvania
for the years ended June 30, 2023 and 2022
(in thousands)

| | 2023 | 2022 |
|--|---------------------|---------------------|
| CASH FLOWS FROM OPERATING ACTIVITIES: | | |
| Increase in total net assets | \$ 878,683 | \$ 1,926,117 |
| Adjustments to reconcile increase in total net assets to net cash provided by operating activities: | | |
| Depreciation and amortization | 631,017 | 601,252 |
| Provision for bad debts | 12,639 | 10,655 |
| (Gain) loss on investments, net | (123,364) | 367,312 |
| Loss on disposal of property, plant and equipment | 17,741 | 6,338 |
| Donated equipment | (137) | (1,113) |
| Receipt of contributed securities | (126,050) | (132,109) |
| Proceeds from contributed securities | 42,898 | 31,810 |
| Receipt of contributions designated for the acquisition of long-lived assets and long-term investment | (259,864) | (285,814) |
| Pension, OPEB and other, net | (204,662) | (854,025) |
| Changes in operating assets and liabilities: | | |
| Accounts and loans receivable | 102,105 | (205,196) |
| Contributions receivable | 66,980 | (39,936) |
| Other assets | (54,541) | (49,730) |
| Accounts payable, accrued expenses and accrued retirement benefits | (401,949) | (356,240) |
| Deposits and advances | (17,103) | 19,141 |
| Deferred income | (10,952) | 9,961 |
| NET CASH PROVIDED BY OPERATING ACTIVITIES | 553,441 | 1,048,423 |
| CASH FLOWS FROM INVESTING ACTIVITIES: | | |
| Purchase of investments | (16,688,794) | (18,713,752) |
| Proceeds from sale of investments | 16,946,009 | 18,958,408 |
| Purchase of property, plant and equipment | (780,336) | (868,238) |
| NET CASH USED BY INVESTING ACTIVITIES | (523,121) | (623,582) |
| CASH FLOWS FROM FINANCING ACTIVITIES: | | |
| Proceeds from contributions received designated for the acquisition of long-lived assets and long-term investment | 259,864 | 285,815 |
| Proceeds from contributed securities received designated for the acquisition of long-lived assets and long-term investment | 81,050 | 101,799 |
| Federal student loan repayments | (7,139) | (7,145) |
| Repayment of debt obligations | (81,405) | (214,892) |
| Proceeds from issuances of debt obligations | 16,419 | 125,129 |
| NET CASH PROVIDED BY FINANCING ACTIVITIES | 268,789 | 290,706 |
| NET INCREASE IN CASH AND CASH EQUIVALENTS | 299,109 | 715,547 |
| Cash and cash equivalents, beginning of year | 3,173,252 | 2,457,705 |
| CASH AND CASH EQUIVALENTS, END OF YEAR | \$ 3,472,361 | \$ 3,173,252 |
| RECONCILIATION TO CONSOLIDATED STATEMENTS OF FINANCIAL POSITION: | | |
| Cash and cash equivalents, Consolidated Statements of Financial Position | \$ 3,217,099 | \$ 3,163,942 |
| Cash included in Investments, at fair value | 255,262 | 9,310 |
| CASH AND CASH EQUIVALENTS, END OF YEAR | \$ 3,472,361 | \$ 3,173,252 |
| SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION: | | |
| Cash paid for interest, net of amounts capitalized | \$ 150,335 | \$ 138,357 |
| Decrease in accrued plant, property and equipment | (6,377) | (25,198) |
| Operating cash flows for operating leases | 78,911 | 76,260 |
| Right-of-use assets obtained in exchange for lease liabilities | 116,114 | 70,727 |

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

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization

The University of Pennsylvania (“University”), located in Philadelphia, Pennsylvania, is an independent, nonsectarian, not-for-profit institution of higher learning founded in 1740. The University Academic Component (“Academic Component”) provides educational services, primarily for students at the undergraduate, graduate, professional and postdoctoral levels and performs research, training and other services under grants, contracts and similar agreements with sponsoring organizations, primarily departments and agencies of the United States Government. The University also operates an integrated health care delivery system, the University of Pennsylvania Health System (“UPHS”). The University is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code.

Basis of Presentation

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”) and include the accounts of the University and its subsidiaries over which the University exercises control. All material transactions between the University and its subsidiaries are eliminated in consolidation. Investments in subsidiaries over which the University has the ability to exercise significant influence are reported using the equity method of accounting. Other investments in subsidiaries are reported using the measurement alternative – at cost adjusted for impairment, if any, unless an observable transaction for an identical or similar security occurs.

The net assets of the University are classified and reported as follows:

Without donor restrictions – includes net assets that are not subject to donor-imposed restrictions.

With donor restrictions – includes net assets that are (i) subject to legal or donor-imposed restrictions that will be met by actions of the University and/or the passage of time, and (ii) the original values of donor restricted net assets, the use of which is limited to investment and can only be appropriated for expenditure by the University in accordance with the Pennsylvania Uniform Principal and Income Act (Pennsylvania Act).

Expenses are reported as a decrease in net assets without donor restrictions. Gains and losses associated with property, plant and equipment disposals are included in Other income and Other operating expenses, respectively. Gains and losses on investments are included in Return on investments, net and are reported as increases or decreases in net assets without donor restrictions unless their use is restricted by explicit donor stipulation or by law. Gains or losses associated with all other activities, such as debt retirements and pension and postretirement plan actuarial valuation adjustments, are reported in Pension, other postretirement employee benefits (OPEB) and other, net. Donor-restricted resources intended for the acquisition or construction of long-lived assets are initially reported as net assets with donor restrictions and released from restrictions to net assets without donor restrictions when the asset is placed in service or in accordance with donor-specified terms.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Expirations of restrictions on contributions and investment income, reported as Net assets released from restrictions, and the corresponding amounts are included in the Consolidated Statements of Activities as follows (in thousands):

| Net Assets Without Donor Restrictions | 2023 | 2022 |
|--|-------------------|-------------------|
| Contributions and donor support | \$ 154,965 | \$ 125,506 |
| Investment income | 460,923 | 384,073 |
| Contributions and donor support for capital related activities | 138,401 | 54,603 |
| Net assets released from restrictions | \$ 754,289 | \$ 564,182 |

| Net Assets With Donor Restrictions | 2023 | 2022 |
|---|--------------|--------------|
| Net assets released from restrictions | \$ (754,289) | \$ (564,182) |

Fair Value

The University values certain financial and non-financial assets and liabilities by applying the Financial Accounting Standards Board (FASB) pronouncement on Fair Value Measurements. The pronouncement defines fair value and establishes a framework for measuring fair value that includes a hierarchy that categorizes and prioritizes the sources used to measure and disclose fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). The hierarchy is broken down into three levels based on inputs that market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of the University as follows:

Level 1: Unadjusted quoted market prices in active markets for identical assets or liabilities.

Level 2: Unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable.

Level 3: Unobservable inputs for the asset or liability.

Inputs broadly refer to the assumptions that market participants use to make valuation decisions, including assumptions about risk. Inputs may include price information, volatility statistics, specific and broad credit data, liquidity statistics and other factors. The University is required by the pronouncement to maximize the use of observable inputs (Levels 1 and 2) and minimize the use of unobservable inputs (Level 3). The University considers observable data to be that market data which is readily available, regularly distributed or updated, reliable and verifiable, not proprietary and provided by independent sources that are actively involved in the relevant market. The categorization of a financial instrument within the hierarchy is based upon the pricing transparency of the instrument and does not necessarily correspond to the University's perceived risk of that instrument.

Assets and liabilities are disclosed in the Notes to Consolidated Financial Statements within the hierarchy based on the lowest (or least observable) input that is significant to the measurement. The University's assessment of the significance of an input requires judgment, which may affect the valuation and categorization within the fair value hierarchy. The fair value of assets and liabilities using Level 3 inputs are generally determined by using pricing models or discounted cash flow methods, which all require significant management judgment or estimation.

As a practical expedient, the University is permitted to estimate the fair value of an investment in an investment company at the measurement date using the reported net asset value (NAV). Adjustment is required if the University expects to sell the investment at a value other than NAV or if the NAV is not calculated in accordance with U.S. GAAP. The University holds investments in its portfolio which are generally valued based on the most current NAV. This

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

amount represents fair value of these investments at June 30, 2023 and 2022. Investments reported at NAV, as a practical expedient, are not included within levels 1, 2, or 3 in the fair value hierarchy.

The University performs additional procedures, including due diligence reviews, on its investments in investment companies and other procedures with respect to the capital account or NAV provided to ensure conformity with US GAAP. The University has assessed factors including, but not limited to, managers' compliance with the Fair Value Measurement standard, price transparency and valuation procedures in place.

Cash and Cash Equivalents

Cash equivalents include demand deposits and liquid investments available for current operations with maturities of three months or less, which would be considered Level 1 investments under the fair value hierarchy. All short-term, highly liquid investments, otherwise qualifying as cash equivalents or restricted cash equivalents, included in the University's investments are treated as Investments, at fair value and are therefore excluded from Cash and cash equivalents in the Statements of Cash Flows.

Investments, at Fair Value

The majority of the University's investments are held in the Associated Investments Fund (AIF). The AIF is invested in accordance with the investment policies set out by an Investment Board which has been appointed by the Trustees of the University of Pennsylvania (the Trustees). The Office of Investments is responsible for the day-to-day management of the AIF including identifying, selecting and monitoring a variety of external investment managers to implement the strategic asset allocation set forth by the Investment Board. The AIF may include marketable and not readily marketable securities that it intends to hold for an indefinite period of time. The University also holds other investments which are not invested in the AIF due to various restrictions. The majority of these investments are in highly liquid short-term and equity type investments. Changes in the fair value of investments are reported in Return on investments, net in the Consolidated Statements of Activities. The following is a summary of the investments held in the AIF by asset allocation, as well as investment risk:

Short-Term

Short-term investments include cash equivalents and fixed income investments with maturities of less than one year. Short-term investments are valued using observable market data and are categorized as Level 1 based on quoted market prices in active markets. The majority of these short-term investments are held in a US Treasury money market account.

Equity

Equity investments consist of direct holdings of public securities in managed accounts as well as mutual funds and private funds. The securities held in managed accounts, along with mutual funds, are generally valued based on quoted market prices in active markets obtained from exchange or dealer markets for identical assets, and are accordingly categorized as Level 1. Private funds are valued at NAV.

Debt

Debt investments consist of direct holdings of securities in managed accounts and private funds. Securities such as US Treasuries, held in managed accounts, are valued based on quoted market prices in active markets and are categorized as Level 1. Securities such as corporate and sovereign bonds, also held in managed accounts, are valued based on quoted market prices or dealer or broker quotations and are categorized as Level 2 or in the cases where inputs are unobservable as Level 3. Private funds are valued at NAV.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Absolute Return

Absolute return investments are made up of allocations to private funds. The fund managers of these private funds invest in a variety of securities, based on the strategy of the fund, which may or may not be quoted in an active market. Private funds are valued at NAV.

Private Equity

Investments in private equity are in the form of private funds. The fund managers primarily invest in investments for which there is no readily determinable market value. The fund managers may value the underlying private investments based on an appraised value, discounted cash flow, industry comparables or some other method. These private fund investments are valued at NAV.

Real Assets

Investments in real assets are made up of private funds and securities in managed accounts. The fund managers of these private funds primarily invest in investments for which there is no readily determinable market value. The fund managers may value the underlying private investments based on an appraised value, discounted cash flow, industry comparables or some other method. These private fund investments are valued at NAV. The securities held in managed accounts are generally valued based on quoted market prices in active markets obtained from exchange or dealer markets for identical assets, and are accordingly categorized as Level 1.

Derivative Instruments

The University, in the normal course of business, utilizes derivative financial instruments in connection with its investment activity. Derivatives utilized by the University include futures, options, swaps and forward currency contracts and are reflected at fair value following the definition of Level 1 and 2 assets and liabilities as previously described. Investments in derivative contracts are subject to foreign exchange and equity price risks that can result in a loss of all or part of an investment. In addition, the University is also subject to additional counterparty risk should its counterparties fail to meet the terms of their contracts.

Investment Risks

The University's investing activities expose it to a variety of risks including market, credit and liquidity risks. The University attempts to identify, measure and monitor risk through various mechanisms including risk management strategies and credit policies.

Market risk is the potential for changes in the fair value of the University's investment portfolio. Commonly used categories of market risk include currency risk (exposure to exchange rate differences between functional currency relative to other foreign currencies), interest rate risk (changes to prevailing interest rates or changes in expectations of futures rates) and price risk (changes in market value other than those related to currency or interest rate risk, including the use of NAV provided).

Credit risk is the risk that one party to a financial investment will cause a financial loss for the other party by failing to discharge an obligation (counterparty risk).

Liquidity risk is the risk that the University will not be able to meet its obligations associated with financial liabilities.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Endowment

The University's endowment consists of 7,695 donor-restricted endowment funds and 1,006 quasi-endowment funds established by management for a variety of purposes. The University reports all endowment investments at fair value. Most of the endowment funds of the University have been pooled in the University's AIF. The endowment funds not pooled in the AIF are primarily invested in equities and bonds.

The Commonwealth of Pennsylvania has not adopted the Uniform Management of Institutional Funds Act (UMIFA) or the Uniform Prudent Management of Institutional Funds Act (UPMIFA). Rather, the Pennsylvania Act governs the investment, use and management of the University's endowment funds.

The Pennsylvania Act does not require the preservation of the fair value of a donor's original gift as of the gift date of a donor-restricted endowment fund, absent explicit donor stipulations to the contrary. However, based on its interpretation of the Pennsylvania Act and relevant accounting literature, the University classifies the following as net assets with donor restrictions for reporting purposes: (i) the original value of donated assets required to be invested in perpetuity; (ii) the original value of subsequent donated assets required to be invested in perpetuity; (iii) accumulations to the donated assets invested in perpetuity made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund; and (iv) donated assets and accumulations that are subject to legal or donor-imposed restrictions that will be met by actions of the University and/or the passage of time. The Pennsylvania Act allows a nonprofit to elect to appropriate for expenditure between 2% and 7% (increased to 10% for fiscal years 2020 through 2022) of the endowment fair value, determined at least annually and averaged over a period of three or more preceding years, including funds whose fair value is less than the original donated value.

In accordance with the Pennsylvania Act, the University has elected to adopt and follow an investment policy seeking a total return for the investments held by the AIF, whether the return is derived from appreciation of capital or earnings and distributions with respect to capital or both. The endowment spending policy which the Board of Trustees has elected to govern the expenditure of funds invested in the AIF, including funds whose fair value is less than the original donated value, is designed to manage annual spending levels and is independent of the cash yield and appreciation of investments for the year. For fiscal year 2023, the spending rule payout is based on the sum of: (i) 70% of the prior fiscal year distribution adjusted by an inflation factor; and (ii) 30% of the prior fiscal year-end fair value of the AIF, lagged one year, multiplied by a 5% target spending rate for all funds. The payout or allocation to operations exceeded actual income, net of expenses, by \$975,606,000 and \$876,619,000 in 2023 and 2022, respectively.

Property, Plant and Equipment

Property, plant and equipment (PPE) is reported net of related depreciation. Donated PPE is reported based on estimated fair value at the date of acquisition. All other PPE is reported at cost. Depreciation is computed on the straight-line method over the estimated useful lives of the assets, or the shorter of the lease term or estimated useful life for leased assets. Contributions of library materials, as well as rare books and other collectibles, are not recorded for financial statement presentation, while purchases are recorded as Other operating expenses on the Consolidated Statement of Activities in the period acquired.

Split-Interest Agreements

The University's split-interest agreements with donors consist 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 and/or other beneficiaries in accordance with the respective agreements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The University recognizes assets contributed to charitable remainder trusts, charitable gift annuities and pooled income funds, where it serves as trustee, at fair value, recognizes a liability to the beneficiaries based on the present value of the estimated future payments to beneficiaries to be made over the estimated remaining life of those beneficiaries using current market rates at the date of the contribution, and recognizes the difference as contribution revenue. Subsequently, the trust assets, invested in equity and debt securities, are measured at fair value at quoted market prices, and are categorized as Level 1, with the changes reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. Liabilities to beneficiaries are revalued based on current market rates, and are categorized as Level 2, with the changes reported as an adjustment to Accrued expense and other liabilities on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities.

Charitable remainder trust assets, where the University does not serve as trustee, are initially valued using the current fair value of the underlying assets, using observable market inputs based on its beneficial interest in the trust, discounted to a single present value using current market rates at the date of the contribution. The initially contributed assets are categorized as Level 3, and reported as Investments, at fair value on the Consolidated Statements of Financial Position and Contribution revenue on the Consolidated Statements of Activities. Subsequent valuation follows this same approach with changes in fair value reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. The primary unobservable input used in the fair value measurement of the charitable remainder trust assets is the discount rate.

Perpetual trust assets are initially valued at the current fair value of the underlying assets using observable market inputs based on its beneficial interest in the trust. The initially contributed assets are categorized as Level 3 and are reported as Investments, at fair value on the Consolidated Statements of Financial Position and as Contribution revenue on the Consolidated Statements of Activities. Subsequent valuation follows this same approach with changes in fair value reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. The primary unobservable inputs used in the fair value measurement of the perpetual trust assets are the underlying securities held by the trust.

The University reports charitable lead trust assets by discounting future cash flows using current market rates at the measurement date, matched to the payment period of the agreement. The initially contributed assets are categorized as Level 3, and reported as Investments, at fair value on the Consolidated Statements of Financial Position and as Contribution revenue on the Consolidated Statements of Activities. Subsequent valuation follows this same approach with changes in fair value reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. The primary unobservable input used in the fair value measurement of the charitable lead trust assets is the discount rate.

Income Taxes

The University is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code. Most of its activities and income are related to its exempt purposes and are exempt from federal and state income taxes. None of its activities and income is subject to Pennsylvania income tax. Unrelated activities and income are subject to both city and federal "Unrelated Business Income Tax."

The Tax Cuts and Jobs Act (the "Act"), enacted on December 22, 2017, impacts the University in several ways, including the addition of excise taxes on executive compensation and net investment income, as well as new rules for calculating unrelated business taxable income. The University records an estimate for related tax expense based on currently available regulatory guidance of the Act. Additionally, The University has made provisions for deferred taxes, representing future excise tax payable on unrealized gains in excess of the tax basis of investments. As of June

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30, 2023, a liability of \$63,764,000 was reported in Accrued expense and other liabilities on the Consolidated Statements of Financial Position and Return on investments, net of amounts classified as operating revenue on the Consolidated Statements of Activities.

The University regularly evaluates its tax position and does not believe it has any uncertain tax positions that require disclosure or adjustment to the consolidated financial statements.

Tuition and Fees

Tuition and fees includes tuition, room and board, and other student fees which are recognized as revenue over time during the fiscal year in which the related academic services are rendered. Tuition and fees received in advance of services to be rendered are reported as Deferred income on the Consolidated Statements of Financial Position. The University maintains a policy of offering qualified undergraduate applicants admission to the University without regard to financial circumstance, as well as meeting in full the demonstrated financial need of those admitted. Tuition and fees have been reduced by certain grants and scholarships in the amount of \$401,396,000 and \$375,596,000 in 2023 and 2022, respectively.

Sponsored Programs

Sponsored programs includes revenue from exchange and conditional non-exchange agreements with governments, foundations and private sources, generally for research activities. Revenue from exchange agreements is generally recognized at a point in time when performance obligations are met, and revenue from conditional non-exchange agreements is generally recognized as the related costs are incurred. Non-exchange agreements are considered conditional if the terms of the agreement include both a right of return/release of assets received/promised and a barrier. These agreements become unconditional as barriers are met. At June 30, 2023, the University has unrecorded conditional agreements of \$2,474,380,000. In 2023 and 2022, sponsored programs revenue earned from governmental sources totaled \$979,174,000 and \$927,666,000, respectively. Indirect costs recovered on federally-sponsored programs are generally based on predetermined reimbursement rates which are stated as a percentage and distributed based on the modified total direct costs incurred. The University negotiates its federal indirect rates with its cognizant federal agency. Indirect costs recovered on all other grants and contracts are based on rates negotiated with the respective sponsors. Funds received for sponsored research activity are subject to audit. Based upon information currently available, management believes that any liability resulting from such audits will not materially affect the financial position or operations of the University.

Contributions

Contributions are revenues from unconditional non-exchange agreements with private sources and foundations. Contributions are recognized in the period received and reported as increases in the appropriate net asset category based on the presence or absence of donor-imposed restrictions. Non-exchange agreements are considered conditional if the terms of the agreement include both a right of return/release of assets received/promised and a barrier. These agreements become unconditional as barriers are met. Contributions and donor support without donor restrictions also includes net assets released as a result of corresponding expenditures which met donor-imposed restrictions. Contributions designated for the acquisition of long-lived assets and long-term investment are reported in Nonoperating activities.

The University reports unconditional pledges at fair value by discounting future cash flows using current market rates at the measurement date, ranging from 4.70% to 5.43%, matched to the payment period of the agreement, and accordingly categorizes these assets as Level 3. The primary unobservable input used in the fair value measurement of the University's Contributions receivable is the discount rate. Changes in the fair value of the University's

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Contributions receivable due to fluctuations in the discount rate are reported as Contribution revenue on the Consolidated Statements of Activities.

Net Patient Service Revenue

Net patient service revenue is derived from contracts with patients of UPHS in which its performance obligation is to provide health care services. Net patient service revenue is recorded over time during the period these performance obligations are satisfied and at the determined transaction price, which represents the estimated net realizable amounts due from patients, third-party payers and others for health care services rendered. Estimated net realizable amounts represent amounts due, net of implicit and explicit price concessions. Implicit 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. After satisfaction of amounts due from insurance and reasonable efforts to collect from patients have been exhausted, UPHS follows established guidelines for placing certain past-due patient balances with collection agencies, subject to terms of certain restrictions on collection efforts as determined by UPHS. Patient receivables are written off after collection efforts have been followed in accordance with UPHS' policy. Certain revenue received from third-party payers is subject to audit and retroactive adjustment. Any changes in estimates under these contracts are recorded in operations currently.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

COVID-19

In response to the COVID-19 pandemic, the federal government passed the Coronavirus Aid, Relief, and Economic Stimulus Act of 2020 (CARES Act) and the American Rescue Plan Act of 2021 (ARP) which made funds available to UPHS and the Academic Component through various provisions of the legislation. The following table summarizes the related impact on the Consolidated Financial Statements as of June 30, 2023 and 2022, and for the years then ended (in thousands):

| | Line Item | 2023 | 2022 |
|---|--|-----------|------------|
| Consolidated Statements of Activities: | | | |
| UPHS CARES Act Provider relief funding | Other income | \$ 21,257 | \$ 18,654 |
| UPHS ARP PA DHS Act 2 funding | Other income | - | 19,239 |
| Higher Education Emergency Relief funding | Other income | - | 22,494 |
| Higher Education Emergency Relief funding | Sponsored programs | - | 17,847 |
| Consolidated Statements of Financial Position: | | | |
| UPHS Centers for Medicare and Medicaid Services | | | |
| Accelerated and Advanced Payments Program | Accrued expenses and other liabilities | \$ - | \$ 116,304 |
| Deferral of Social Security taxes | Accrued expenses and other liabilities | - | 84,991 |

Recent Authoritative Pronouncements

Periodically, the FASB issues updates to the Accounting Standards Codification (ASC) which impacts the University's financial reporting and related disclosures. The paragraph that follows summarizes a relevant update.

In March 2020, January 2021, April 2022 and December 2022 the FASB issued standard updates on Reference Rate Reform in response to the planned discontinuation of the London Inter-Bank Offered Rate (LIBOR), a key interbank reference rate. The standard provides accounting relief to contract modifications and optional expedients for

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

applying U.S. GAAP to contracts and other transactions that reference LIBOR or other reference rates that are expected to be discontinued because of rate reform. The University has determined that the standard will have no material impact on the University's results of operations or financial position.

2. UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEM - SUMMARIZED FINANCIAL AND RELATED INFORMATION

The Trustees formed Penn Medicine, the governance structure which oversees the activities of UPHS and the University of Pennsylvania Perelman School of Medicine (PSOM) in order to operate, oversee and coordinate its academic, research and clinical missions.

UPHS is comprised of the following operating entities: Clinical Practices of the University of Pennsylvania; Clinical Care Associates; Hospital of the University of Pennsylvania; Penn Presbyterian Medical Center; Pennsylvania Hospital of the University of Pennsylvania Health System; Chester County Hospital and Health System; Lancaster General Health (LGH); Wissahickon Hospice of the University of Pennsylvania Health System; Princeton HealthCare System (PHCS), and Franklin Casualty Insurance Company, a wholly owned Risk Retention Group, and Quaker Insurance Company Ltd., a wholly owned offshore captive insurance company (collectively referred to as RRG/Captive).

In January 2023, UPHS, Tandigm Health, LLC and Independence Health Group, Inc. executed a Contribution, Exchange, and Warrant Purchases Agreement, whereby UPHS contributed \$50,000,000 in cash and in-kind assets in exchange for 26.7% interest in Class B Units in Tandigm Health, LLC and optional warrants. UPHS executed an 18-year participation agreement whereby UPHS primary care physicians will receive population health support from Tandigm and participate in value-based opportunities from Tandigm.

In January 2023, UPHS entered into an agreement to divest the Pennsylvania College of Health Sciences (PACHS). As a result of the agreement, an impairment loss of \$14,573,000 was reported in Other operating expense on the Consolidated Statements of Activities. In addition, PACHS assets and liabilities of \$43,369,000 and \$19,046,000 have been reclassified as "held for sale" within Other assets and Accrued expenses and other liabilities, respectively, on the Consolidated Statements of Financial Position.

Throughout the year, certain transactions (primarily billings for allocations of common costs, physicians' salaries and benefits, certain purchased services and support for PSOM) are conducted between UPHS and the University. Nonoperating, net, as shown below, includes transfers from UPHS to the University of \$150,374,000 and \$148,317,000 in 2023 and 2022, respectively, to further the research and educational activities of PSOM, and \$11,546,000 and \$11,027,000 in 2023 and 2022, respectively, for other activities. In addition, UPHS recognized operating expenses of \$20,717,000 and \$20,588,000 in 2023 and 2022, respectively, to support academic operating activities in the clinical departments of PSOM.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The effect of all these transactions is included in the following summarized financial information of UPHS as of and for the years ended June 30, 2023 and 2022 (in thousands):

| | 2023 | 2022 |
|---|----------------------|----------------------|
| Net patient service revenue | \$ 8,727,443 | \$ 8,104,389 |
| Other revenue and support | 1,247,254 | 1,100,018 |
| Total expenses | (9,736,524) | (9,056,929) |
| Excess of revenue over expenses from operations | 238,173 | 147,478 |
| Nonoperating, net | 102,549 | 361,326 |
| Increase in net assets | \$ 340,722 | \$ 508,804 |
| Total current assets | \$ 2,412,873 | \$ 2,240,024 |
| Assets whose use is limited: | | |
| Held by trustees | 168,328 | 165,219 |
| RRG/ Captive | 201,327 | 304,256 |
| Donor restricted and other | 850,670 | 820,548 |
| Designated | 3,871,739 | 4,094,937 |
| Property and equipment, net | 5,915,043 | 5,949,333 |
| Investments and other assets | 909,654 | 821,977 |
| Total assets | \$ 14,329,634 | \$ 14,396,294 |
| Total current liabilities | \$ 1,357,052 | \$ 1,603,575 |
| Long-term debt, net of current portion | 2,464,585 | 2,541,850 |
| Other liabilities | 1,550,984 | 1,634,578 |
| Total liabilities | \$ 5,372,621 | \$ 5,780,003 |
| Net assets | | |
| Without donor restrictions | \$ 8,094,975 | \$ 7,761,326 |
| With donor restrictions | 862,038 | 854,965 |
| Total net assets | \$ 8,957,013 | \$ 8,616,291 |
| Total liabilities and net assets | \$ 14,329,634 | \$ 14,396,294 |

Net Patient Service Revenue

Net Patient Service Revenue (NPSR) for the years ended June 30, 2023 and 2022 is derived from the following payers:

| | 2023 | 2022 |
|---------------------------------------|------|------|
| Medicare (including Managed Medicare) | 34% | 33% |
| Medicaid (including Managed Medicaid) | 12% | 13% |
| Managed care | 33% | 33% |
| Independence Blue Cross (IBC) | 16% | 16% |
| Commercial | 4% | 4% |
| Self pay | 1% | 1% |
| | 100% | 100% |

Third-party payers

UPHS has agreements with the following third-party payers that provide for payments at amounts that differ from its established rates:

Medicare and Medicaid

Inpatient acute care services and outpatient services rendered to Medicare program beneficiaries are paid at prospectively determined rates. These rates vary according to a patient classification system that is based on clinical, diagnostic, and other factors. Inpatient psychiatric services and medical education costs related to Medicare beneficiaries are paid based on a cost reimbursement methodology. UPHS is

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

reimbursed for cost reimbursable items at a tentative rate with final settlement determined after submission of annual cost reports by each hospital and audits thereof by the Medicare fiscal intermediary.

Inpatient and outpatient services rendered to Medicaid program beneficiaries are paid at prospectively determined rates. Additional amounts are allocated to each hospital for training residents and serving a disproportionate indigent population.

Laws and regulations governing the Medicare and Medicaid programs are extremely complex and subject to interpretation. As a result, there is at least a reasonable possibility that recorded estimates will change by a material amount in the near term.

IBC and Commercial

During 2017, UPHS and IBC reached agreement on terms of a five-year agreement. Payments made for inpatient services provided to IBC traditional and managed care subscribers are effected on a per case rate basis for most services. Payment for outpatient services is principally based upon negotiated fee schedules. Hospital and physician rates also provide for annual inflationary increases. In addition, incentives are paid for high performance with regard to clinical outcomes and patient quality. On September 10, 2021, this agreement was extended from June 30, 2022 to June 30, 2025.

During 2015, UPHS and Aetna reached agreement on terms of a five-year agreement. A one-year bridge agreement was initiated effective July 1, 2020, and UPHS and Aetna subsequently extended this agreement through June 30, 2025. The new agreement consolidated all prior existing agreements across all UPHS regions and entities. Further, extensive new value-based payment models were layered on top of the existing fee-for-service framework.

UPHS also has reimbursement agreements with other commercial insurance carriers, health maintenance organizations and preferred provider organizations. The basis for reimbursement under these agreements includes prospectively determined rates per discharge, discounts from established charges and prospectively determined per diem rates.

Charity Care

UPHS provides services to patients who meet certain criteria under its charity care policy without charge or at amounts less than UPHS' established rates. Because UPHS does not pursue collections for these patients, such amounts have been excluded from NPSR. UPHS estimates the costs of providing charity care services based on data derived from a combination of UPHS' cost accounting system and the ratio of costs to charges. Of the Total expenses reported above by UPHS, an estimated \$37,665,000 and \$31,336,000 were incurred as a result of providing services to charity patients for the years ended June 30, 2023 and 2022, respectively.

Medical Professional Liability Claims

The University is insured for medical professional liability claims through the combination of the Medical Care Availability and Reduction of Error Fund (Mcare), various commercial insurance companies and risk retention programs.

Mcare levies health care provider surcharges, as a percentage of the Pennsylvania Joint Underwriters Association rates for basic coverage, to pay claims and pay administrative expenses of Mcare participants. These surcharges are recognized as expenses in the period incurred. Mcare operates on a pay-as-you-go basis and no provision has been

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

made for any future Mcare assessments in the accompanying financial statements, as the University's portion of the unfunded Mcare liability cannot be estimated.

Anticipated insurance recoveries and estimated liabilities for medical malpractice claims or similar contingent liabilities are presented separately on the Consolidated Statements of Financial Position in Accounts receivable, net and Accrued expenses and other liabilities, respectively. The University accrues for estimated risks arising from both asserted and unasserted medical professional liability claims. The estimate of the gross liability and corresponding receivable for unasserted claims arising from unreported incidents is based on analysis of historical claims data by an independent actuary, which is recorded utilizing a 2.25% discount rate as of June 30, 2023 and 2022. The gross liability recorded under this program is \$866,118,000 and \$797,620,000 at June 30, 2023 and 2022, respectively, with a corresponding receivable of \$200,145,000 and \$119,795,000 at June 30, 2023 and 2022, respectively.

3. ACCOUNTS RECEIVABLE

Accounts receivable are reported at their net realizable value. The major components of receivables, net of allowances for doubtful accounts of \$34,878,000 and \$31,546,000 at June 30, 2023 and 2022, respectively, are as follows (in thousands):

| | 2023 | 2022 |
|---------------------------------------|---------------------|---------------------|
| Patient | \$ 1,028,058 | \$ 1,012,942 |
| Intellectual property | 71,054 | 350,346 |
| Sponsored research | 208,431 | 175,259 |
| Malpractice | 200,145 | 119,795 |
| Trade | 62,740 | 66,726 |
| Student | 25,383 | 33,973 |
| Other | 220,653 | 165,986 |
| TOTAL ACCOUNTS RECEIVABLE, NET | \$ 1,816,464 | \$ 1,925,027 |

4. LOANS RECEIVABLE

Loans receivable, and related allowances for doubtful accounts, consist of the following at June 30, 2023 and 2022 (in thousands):

| 2023 | Receivable | Allowance | Net |
|---------------------|------------------|-----------------|------------------|
| Student Loans: | | | |
| Federally-sponsored | \$ 28,472 | | \$ 28,472 |
| Other | 10,748 | \$ 2,434 | 8,314 |
| Total Student loans | \$ 39,220 | \$ 2,434 | \$ 36,786 |
| Other | 16,710 | 474 | 16,236 |
| TOTAL | \$ 55,930 | \$ 2,908 | \$ 53,022 |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

2022

| | Receivable | Allowance | Net |
|---------------------|------------------|-----------------|------------------|
| Student Loans: | | | |
| Federally-sponsored | \$ 35,478 | | \$ 35,478 |
| Other | 11,860 | \$ 2,897 | 8,963 |
| Total Student loans | \$ 47,338 | \$ 2,897 | \$ 44,441 |
| Other | 15,787 | 419 | 15,368 |
| TOTAL | \$ 63,125 | \$ 3,316 | \$ 59,809 |

Loans receivable primarily consists of student loans. Student loans include federally-sponsored student loans and donor-restricted student loans with mandated interest rates and repayment terms. The federally-sponsored student loans represent amounts due from current and former students under various Federal Government funded loan programs offered to graduate and undergraduate students. Loans disbursed under these programs are able to be assigned to the Federal Government upon default by the borrower; therefore, no related allowance is considered necessary. Funding received under these programs is ultimately refundable to the Federal Government in the event the University no longer participates and accordingly is reported as a liability in Federal student loan advances in the Consolidated Statements of Financial Position. Determination of the fair value of student loans receivable is not practicable.

Loans receivable are reported at their net realizable value. The University regularly assesses the adequacy of the allowances for expected credit losses of its loans by performing ongoing evaluations, including such factors as aging, differing economic risks associated with each loan category, financial condition of specific borrowers, economic environment in which the borrowers operate, level of delinquent loans, value of collateral and existence of guarantees or indemnifications.

5. CONTRIBUTIONS RECEIVABLE

A summary of contributions receivable at June 30, 2023 and 2022, is as follows (in thousands):

| | 2023 | 2022 |
|---|-------------------|-------------------|
| Unconditional promises expected to be collected in: | | |
| Less than one year | \$ 166,125 | \$ 192,660 |
| One year to five years | 265,356 | 282,350 |
| Over five years | 101,064 | 126,151 |
| | 532,545 | 601,161 |
| Less: Discount | (59,402) | (57,500) |
| Less: Allowances for doubtful amounts | (25,730) | (29,873) |
| TOTAL CONTRIBUTIONS RECEIVABLE, NET | \$ 447,413 | \$ 513,788 |

At June 30, 2023 and 2022, the University has outstanding unrecorded conditional promises to give, including non-legally binding bequests, of \$542,287,000 and \$516,618,000, respectively. When conditional promises to give become unconditional or non-legally binding bequests cash payments are received, they are recorded and are generally restricted for operations, endowment and capital projects as stipulated by the donors.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

6. INVESTMENTS, AT FAIR VALUE

A summary of investments, including the AIF, as of June 30, 2023 and 2022, categorized in accordance with the fair value hierarchy, is as follows (in thousands):

| 2023 | | | | | Investments at | Total |
|---|---------------------|------------------|-------------------|----------------------|----------------------|-------|
| | Level 1 | Level 2 | Level 3 | NAV | | |
| Short-term: | \$ 980,619 | | | | \$ 980,619 | |
| Equity: | | | | | | |
| US equities | 560,700 | | | \$ 1,735,579 | 2,296,279 | |
| International equities | 394,339 | | | 1,297,292 | 1,691,631 | |
| Emerging market equities | | | | 1,398,031 | 1,398,031 | |
| Total Equity | 955,039 | | | 4,430,902 | 5,385,941 | |
| Debt: | | | | | | |
| US treasuries | 1,483,760 | \$ 3,173 | | | 1,486,933 | |
| Corporate bonds | 34,782 | 14,545 | | | 49,327 | |
| Total Debt | 1,518,542 | 17,718 | | | 1,536,260 | |
| Split-interest agreements | 83,249 | | \$ 366,820 | | 450,069 | |
| Absolute return | | | | 4,275,853 | 4,275,853 | |
| Real assets | 85 | 59 | | 2,603,378 | 2,603,522 | |
| Private equity | | | 23,080 | 7,829,756 | 7,852,836 | |
| Derivative instruments | | 2,784 | | | 2,784 | |
| Other | | | | 2,652 | 2,652 | |
| TOTAL INVESTMENTS, AT FAIR VALUE | \$ 3,537,534 | \$ 20,561 | \$ 392,552 | \$ 19,139,889 | \$ 23,090,536 | |

| 2022 | | | | | Investments at | Total |
|---|---------------------|-------------------|-------------------|----------------------|----------------------|-------|
| | Level 1 | Level 2 | Level 3 | NAV | | |
| Short-term: | \$ 1,325,507 | | | | \$ 1,325,507 | |
| Equity: | | | | | | |
| US equities | 647,907 | | | \$ 1,265,830 | 1,913,737 | |
| International equities | 183,787 | | | 1,153,652 | 1,337,439 | |
| Emerging market equities | | | | 1,457,588 | 1,457,588 | |
| Total Equity | 831,694 | | | 3,877,070 | 4,708,764 | |
| Debt: | | | | | | |
| US treasuries | 822,001 | \$ 37,217 | | | 859,218 | |
| Corporate bonds | 101,929 | 150,064 | | | 251,993 | |
| Total Debt | 923,930 | 187,281 | | | 1,111,211 | |
| Split-interest agreements | 84,635 | | \$ 350,812 | | 435,447 | |
| Absolute return | | | | 4,332,605 | 4,332,605 | |
| Real assets | 148,845 | 59 | 3,547 | 2,469,399 | 2,621,850 | |
| Private equity | | | 20,234 | 7,891,341 | 7,911,575 | |
| Derivative instruments | | 34,680 | | | 34,680 | |
| Other | | | | 2,644 | 2,644 | |
| TOTAL INVESTMENTS, AT FAIR VALUE | \$ 3,314,611 | \$ 222,020 | \$ 377,237 | \$ 18,570,415 | \$ 22,484,283 | |

Included in Short-term investments is \$15,196,000 and \$24,380,000 of amounts held by trustees under indenture and escrow agreements at June 30, 2023 and 2022, respectively.

At June 30, 2023 and 2022, Short-term investments include \$23,091,000 and \$50,264,000, respectively, of outstanding receivables from trading activities. At June 30, 2023 and 2022, Short-term investments also include \$27,333,000 and \$23,803,000, respectively, of outstanding payables from trading activities.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Liabilities related to equity short positions of \$957,869,000 and \$492,721,000 at June 30, 2023 and 2022, respectively, are reported in Accrued expenses and other liabilities on the Consolidated Statements of Financial Position. These liabilities are valued using observable market data and are categorized as Level 1 based on quoted market prices in active markets.

Split-interest agreement investments included in Level 1 above are readily marketable assets invested by the University separately from the AIF where the University serves as trustee. These amounts include assets related to the Academic Component charitable gift annuities totaling \$42,477,000 and \$41,332,000 at June 30, 2023 and 2022, respectively. Included in these split-interest agreement investments are amounts held to meet legally mandated annuity reserves of \$24,306,000 and \$25,853,000 as of June 30, 2023 and 2022, respectively, as required by the laws of the following states where certain individual donors reside: California, Maryland, New Jersey and New York. Level 3 split-interest agreement investments are managed and invested outside of the University by external trustees.

A summary of Level 3 assets included in split-interest agreement investments, where the University is not trustee, measured at fair value, as of June 30, 2023 and 2022 is as follows (in thousands):

| | 2023 | 2022 |
|-----------------------------|-------------------|-------------------|
| Charitable remainder trusts | \$ 16,553 | \$ 18,197 |
| Charitable lead trusts | 4,119 | 4,266 |
| Perpetual trusts | 346,148 | 328,349 |
| Total | \$ 366,820 | \$ 350,812 |

Changes to the reported amounts of split-interest agreement investments measured at fair value using unobservable (Level 3) inputs as of June 30, 2023 and 2022 are as follows (in thousands):

| | Charitable Remainder Trusts | Charitable Lead Trusts | Perpetual Trusts | Total |
|-------------------------------|-----------------------------------|------------------------------|---------------------|------------|
| 2023 | | | | |
| June 30, 2022 | \$ 18,197 | \$ 4,266 | \$ 328,349 | \$ 350,812 |
| Net realized gains (losses) | | | (2,380) | (2,380) |
| Net unrealized gains (losses) | (1,276) | (147) | 22,206 | 20,783 |
| Acquisitions | | | 3,630 | 3,630 |
| Liquidations | (368) | | (5,657) | (6,025) |
| June 30, 2023 | \$ 16,553 | \$ 4,119 | \$ 346,148 | \$ 366,820 |

| | Charitable Remainder Trusts | Charitable Lead Trusts | Perpetual Trusts | Total |
|-------------------------------|-----------------------------------|------------------------------|---------------------|------------|
| 2022 | | | | |
| June 30, 2021 | \$ 18,874 | \$ 6,523 | \$ 370,297 | \$ 395,694 |
| Net realized gains (losses) | | | 9,830 | 9,830 |
| Net unrealized gains (losses) | 730 | (1,931) | (53,298) | (54,499) |
| Acquisitions | | | 1,520 | 1,520 |
| Liquidations | (1,407) | (326) | | (1,733) |
| June 30, 2022 | \$ 18,197 | \$ 4,266 | \$ 328,349 | \$ 350,812 |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following tables set forth the fair value, related gains (losses) and notional amounts of the University's derivative instruments by contract type as of June 30, 2023 and 2022 (in thousands):

| 2023 | Notional Amount | Gross Derivative Assets | Gross Derivative Liabilities | Derivative Gains (Losses) |
|----------------------------|----------------------------|--|---|--------------------------------------|
| Foreign currency contracts | \$ 261,012 | | \$ 25,186 | \$ (15,362) |
| Futures contracts | | | | (9,497) |
| Options contracts | 149,044 | \$ 2,784 | 648 | 453 |
| Total | \$ 410,056 | \$ 2,784 | \$ 25,834 | \$ (24,406) |

| 2022 | Notional Amount | Gross Derivative Assets | Gross Derivative Liabilities | Derivative Gains (Losses) |
|----------------------------|----------------------------|--|---|--------------------------------------|
| Foreign currency contracts | \$ 145,227 | | \$ 13,948 | \$ (24,855) |
| Futures contracts | (529,474) | \$ 30,032 | | 75,133 |
| Options contracts | 153,941 | 4,648 | 446 | (533) |
| Total | \$ (230,306) | \$ 34,680 | \$ 14,394 | \$ 49,745 |

The notional amount is representative of the volume and activity of the respective derivative type during the years ended June 30, 2023 and 2022.

Gross derivative assets and liabilities are shown on the Consolidated Statements of Financial Position in Investments, at fair value and Accrued expenses and other liabilities, respectively. Derivative gains (losses) are shown in Return on investments, net on the Consolidated Statements of Activities, in the appropriate net asset classification.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Details on the fair value, remaining estimated life, outstanding commitments, current redemption terms and restrictions by strategy and type of investment (excluding Split-interest agreements, Derivative instruments, and Other investments) are provided below (in thousands):

| Strategy | Fair Value at June 30, | | Outstanding Commitments | Redemption Terms | Redemption Restrictions |
|--------------------------|------------------------|----------------------|----------------------------|---|---|
| | 2023 | 2022 | | | |
| Short-term | \$ 980,619 | \$ 1,325,507 | | Daily | None |
| Equity: | | | | | |
| Managed accounts | 729,498 | 650,227 | | Daily and semi-annually with varying notice periods | None |
| Mutual funds | 225,542 | 181,468 | | Daily | None |
| Private funds (1) | 4,430,901 | 3,877,069 | \$ 55,892 | Weekly to annually with varying notice periods | Lock-up provisions ranging from 0 to 5 years and side pocket investments (2) |
| Total Equity | 5,385,941 | 4,708,764 | 55,892 | | |
| Debt: | | | | | |
| Managed accounts | 1,536,260 | 1,111,211 | | Daily | None |
| Total Debt | 1,536,260 | 1,111,211 | | | |
| Absolute return | 4,275,853 | 4,332,605 | 313,073 | Range from monthly to annually and close- ended funds not available for redemption | Lock-up provisions ranging from 0 to 5 years with earlier redemptions subject to redemption fee, close- ended funds not available for redemption, and side pocket investments (2) |
| Private equity | 7,852,836 | 7,911,575 | 3,328,468 | Close-ended funds not available for redemption | Close-ended funds not available for redemption |
| Real assets: | | | | | |
| Managed accounts | - | 152,392 | | Daily | None |
| Private funds (1) | 2,603,522 | 2,469,458 | 1,298,306 | Close-ended funds not available for redemption | Close-ended funds not available for redemption |
| Total Real assets | 2,603,522 | 2,621,850 | 1,298,306 | | |
| Total | \$ 22,635,031 | \$ 22,011,512 | \$ 4,995,739 | | |

(1) Private funds consist of close-ended and open-ended funds generally in the form of limited partnerships. Close-ended funds have varying remaining fund terms between 1 to 16 years.

(2) Side pocket investments represent investments designated by a manager that are not available for liquidity in an otherwise liquid fund vehicle.

Invested in the AIF with an aggregate fair value of \$211,464,000 and \$217,928,000 at June 30, 2023 and 2022, respectively, is a perpetual trust managed by an external trustee who has delegated investment decisions to the University. The University invests the assets of this trust in accordance with its endowment policy.

The University has made investments in various long-lived partnerships and, in other cases, has entered into contractual agreements that may limit its ability to initiate redemptions due to notice periods, lock-ups and gates. The University has also made commitments to various limited partnerships. The University expects these funds to be called over the next 5 years. The total amount of unfunded commitments is \$4,995,739,000 which represents 24.5% of the AIF value as of June 30, 2023.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

A summary of the University's total investment return, net of external and direct internal investment expenses, for the years ended June 30, 2023 and 2022 is presented below (in thousands):

| | 2023 | 2022 |
|--|-------------------|---------------------|
| AIF investment income | \$ 94,743 | \$ 146,425 |
| AIF realized and unrealized gains (losses) | 174,201 | (99,940) |
| Total return on AIF | 268,944 | 46,485 |
| Other investment gains (losses) | 95,012 | (216,419) |
| Total return on investments, net | \$ 363,956 | \$ (169,934) |

7. ENDOWMENT

The composition and changes to the amount of the University's endowment at June 30, 2023 are as follows (in thousands):

| | Without Donor Restrictions | With Donor Restrictions | Total |
|----------------------------------|-------------------------------|-------------------------------|----------------------|
| Donor-restricted endowment funds | | \$ 9,918,510 | \$ 9,918,510 |
| Quasi-endowment funds | \$ 11,044,431 | | 11,044,431 |
| June 30, 2023 | \$ 11,044,431 | \$ 9,918,510 | \$ 20,962,941 |

| | Without Donor Restrictions | With Donor Restrictions | Total |
|--|-------------------------------|-------------------------------|----------------------|
| Net assets, June 30, 2022 | \$ 10,672,892 | \$ 10,051,459 | \$ 20,724,351 |
| Investment return | 120,222 | 130,346 | 250,568 |
| New gifts | 18,442 | 201,429 | 219,871 |
| Allocation of endowment assets for expenditure | (975,606) | | (975,606) |
| Other investment allocation | (8,730) | | (8,730) |
| Transfers to create board designated funds | 721,087 | | 721,087 |
| Donor-imposed income reinvestments | | 31,660 | 31,660 |
| Other transfers | 32,377 | (32,637) | (260) |
| Released from restriction | 463,747 | (463,747) | - |
| Net assets, June 30, 2023 | \$ 11,044,431 | \$ 9,918,510 | \$ 20,962,941 |

The composition and changes to the amount of the University's endowment at June 30, 2022 are as follows (in thousands):

| | Without Donor Restrictions | With Donor Restrictions | Total |
|----------------------------------|-------------------------------|-------------------------------|----------------------|
| Donor-restricted endowment funds | | \$ 10,051,459 | \$ 10,051,459 |
| Quasi-endowment funds | \$ 10,672,892 | | 10,672,892 |
| June 30, 2022 | \$ 10,672,892 | \$ 10,051,459 | \$ 20,724,351 |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| | Without Donor Restrictions | With Donor Restrictions | Total |
|--|-------------------------------|-------------------------------|----------------------|
| Net assets, June 30, 2021 | \$ 10,337,266 | \$ 10,186,280 | \$ 20,523,546 |
| Investment return | (26,114) | (57,799) | (83,913) |
| New gifts | 9,498 | 319,291 | 328,789 |
| Allocation of endowment assets for expenditure | (876,619) | | (876,619) |
| Other investment allocation | (10,097) | | (10,097) |
| Transfers to create board designated funds | 810,005 | | 810,005 |
| Donor-imposed income reinvestments | | 26,629 | 26,629 |
| Other transfers | 41,567 | (35,556) | 6,011 |
| Released from restriction | 387,386 | (387,386) | - |
| Net assets, June 30, 2022 | \$ 10,672,892 | \$ 10,051,459 | \$ 20,724,351 |

At June 30, 2023 and 2022, the aggregate amount of funds reported in Net assets with donor restrictions for which the fair value was below historic value was \$12,456,000 and \$5,636,000, respectively.

8. PROPERTY, PLANT AND EQUIPMENT, NET

The components of PPE at June 30, 2023 and 2022 are as follows (in thousands):

| | Estimated Useful Life in years | 2023 | 2022 |
|---|-----------------------------------|---------------------|---------------------|
| Land and land improvements | N/A to 20 | \$ 450,931 | \$ 447,993 |
| Buildings and fixed equipment | 5 to 50 | 13,526,265 | 13,255,569 |
| Moveable equipment and other | 4 to 20 | 2,550,102 | 2,543,589 |
| Construction-in-progress | | 690,888 | 420,071 |
| | | 17,218,186 | 16,667,222 |
| Less: Accumulated depreciation | | (7,755,128) | (7,276,098) |
| TOTAL PROPERTY, PLANT AND EQUIPMENT, NET | | \$ 9,463,058 | \$ 9,391,124 |

The University recorded \$648,551,000 and \$622,720,000 of depreciation expense for the years ended June 30, 2023 and 2022, respectively.

The University capitalized \$14,528,000 and \$26,203,000 of interest costs for the years ended June 30, 2023 and 2022, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

9. SPLIT-INTEREST AGREEMENTS

Changes in the value of assets, liabilities and net assets pursuant to split-interest agreements as of June 30, 2023 and 2022 are as follows (in thousands):

| 2023 | | Assets | | Liabilities | | Net Assets |
|-----------------------------------|----|-----------------|----|--------------------|----|-------------------|
| June 30, 2022 | \$ | 435,447 | \$ | (46,408) | \$ | 389,039 |
| New contributions | | 5,462 | | (2,513) | | 2,949 |
| Investment income | | 1,645 | | (1,169) | | 476 |
| Realized and unrealized gain, net | | 22,611 | | | | 22,611 |
| Payments and settlements | | (15,096) | | 6,666 | | (8,430) |
| Actuarial adjustment | | | | (1) | | (1) |
| Net change | | 14,622 | | 2,983 | | 17,605 |
| June 30, 2023 | \$ | 450,069 | \$ | (43,425) | \$ | 406,644 |
| 2022 | | Assets | | Liabilities | | Net Assets |
| June 30, 2021 | \$ | 498,822 | \$ | (53,017) | \$ | 445,805 |
| New contributions | | 2,705 | | (1,903) | | 802 |
| Investment income | | 1,957 | | (1,611) | | 346 |
| Realized and unrealized gain, net | | (57,840) | | | | (57,840) |
| Payments and settlements | | (10,197) | | 8,374 | | (1,823) |
| Actuarial adjustment | | | | 1,749 | | 1,749 |
| Net change | | (63,375) | | 6,609 | | (56,766) |
| June 30, 2022 | \$ | 435,447 | \$ | (46,408) | \$ | 389,039 |

10. CONTINGENCIES, GUARANTEES, AND COMMITMENTS

The University offers various loan programs for students and families to pay tuition, fees and other costs. Certain loans issued by private lending institutions are guaranteed by the University totaling \$23,557,000 and \$17,101,000 at June 30, 2023 and 2022, respectively. Upon default by the borrower, the University is required to pay all or a portion of the outstanding loan balance. The University recognized a liability totaling \$3,209,000 and \$2,648,000 at June 30, 2023 and 2022, respectively, to cover both the fair value of the guarantee and any expected defaults in the portfolio of guaranteed loans.

Various lawsuits, claims and other contingent liabilities arise in the ordinary course of the University's education and health care activities, including specific matters described below. While it is not possible to determine the ultimate outcome of any such actions, the University believes that the outcome will not have a material adverse effect on the University's financial position.

UPHS is involved in a legal matter whereby a jury awarded \$182,738,000 to a plaintiff in a medical malpractice case against UPHS. UPHS is appealing the verdict.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The University is currently involved in various projects that have resulted in capital and property acquisition commitments from the University. As of June 30, 2023, approximately \$695,503,000 has been committed by the University.

11. PENSION AND OTHER POSTRETIREMENT BENEFITS COSTS

Retirement benefits are principally provided to employees through contributory defined contribution plans. The Academic Component's policy with respect to its contribution is to provide up to 10% of eligible employees' salaries, while the UPHS contribution can be up to 6.5%. The University's contributions to these plans amounted to \$315,728,000 and \$266,373,000 as of June 30, 2023 and 2022, respectively.

The University also has non-contributory defined benefit pension plans. Benefits under the plans generally are based on the employee's years of service and compensation during the years preceding retirement. Contributions to the plans are made in amounts necessary to at least satisfy the minimum required contributions as specified in the Internal Revenue Service Code and related regulations. The Academic Component's plan was frozen to new full-time entrants effective July 1, 2000 and part-time entrants effective July 1, 2018. UPHS' primary plan was frozen to new entrants effective July 1, 2010; the benefit accruals for all participants of the LGH and PHCS plans were frozen effective June 30, 2013 and December 31, 2011, respectively. On December 31, 2022, the LGH and PHCS plans were merged into the UPHS plan with no changes to existing benefits and coverages.

The University also has faculty retirement incentive plans which are included in Other retirement programs shown below. The net liability under these plans is \$20,683,000 and \$55,413,000 as of June 30, 2023 and 2022, respectively, with the decrease primarily attributable to the University's offering of a special one-time faculty retirement plan during the year ended June 30, 2021.

Additionally, the University provides certain healthcare and life insurance benefits (OPEB) for retired employees. Only a limited number of employees may become eligible for such benefits if they reach retirement age while working for the University. These and similar benefits for active and certain retired employees are provided through insurance contracts.

The University uses a measurement date of June 30 for its defined benefit pension and OPEB plans.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Change in Plan Assets/Obligation and Funded Status

The funded status of the plans is measured as the difference between the plan assets at fair value and the projected benefit obligation (PBO) for Pension Benefits or accumulated postretirement benefit obligation (APBO) for Other Postretirement Benefits. The resulting net liability is recorded in Accrued retirement benefits on the Statements of Financial Position. The following shows changes in the benefit obligation, plan assets and funded status for the years ended June 30, 2023 and 2022 (in thousands):

| 2023 | Pension Benefits | Other Postretirement Benefits | Total |
|--|-----------------------------|--|-------------------|
| Change in Benefit Obligation: | | | |
| Benefit obligation, beginning of year (PBO/APBO) | \$ 3,380,668 | \$ 842,820 | \$ 4,223,488 |
| Service cost | 51,435 | 26,954 | 78,389 |
| Interest cost | 160,960 | 41,039 | 201,999 |
| Plan participants' contributions | 158 | 10,986 | 11,144 |
| Net actuarial (gain)/loss | (330,086) | (51,873) | (381,959) |
| Benefits paid | (127,611) | (35,078) | (162,689) |
| Benefit obligation, end of year (PBO/APBO) | \$ 3,135,524 | \$ 834,848 | \$ 3,970,372 |
| Change in Plan Assets: | | | |
| Fair value of plan assets, beginning of year | \$ 3,238,768 | \$ 712,371 | \$ 3,951,139 |
| University contributions | 17,089 | 31,852 | 48,941 |
| Plan participants' contributions | 158 | 10,986 | 11,144 |
| Actual return on plan assets | (11,011) | 35,799 | 24,788 |
| Benefits paid | (127,611) | (35,078) | (162,689) |
| Fair value of plan assets, end of year | \$ 3,117,393 | \$ 755,930 | \$ 3,873,323 |
| Funded status, end of year | \$ 18,131 | \$ 78,918 | \$ 97,049 |
| Other retirement programs | | | 145,328 |
| | | | 242,377 |
| Plan with fair value of plan assets in excess of PBO/APBO* | | | 48,292 |
| ACCRUED RETIREMENT BENEFITS | | | \$ 290,669 |

* Included in Other assets on the Consolidated Statements of Financial Position

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| | Pension Benefits | Other Postretirement Benefits | Total |
|---|---------------------|-------------------------------------|-------------------|
| 2022 | | | |
| Change in Benefit Obligation: | | | |
| Benefit obligation, beginning of year (PBO/APBO) | \$ 4,177,955 | \$ 1,096,142 | \$ 5,274,097 |
| Service cost | 76,716 | 43,127 | 119,843 |
| Interest cost | 124,362 | 35,617 | 159,979 |
| Plan participants' contributions | 156 | 11,186 | 11,342 |
| Net actuarial (gain)/loss | (880,613) | (307,658) | (1,188,271) |
| Benefits paid | (117,908) | (35,594) | (153,502) |
| Benefit obligation, end of year (PBO/APBO) | \$ 3,380,668 | \$ 842,820 | \$ 4,223,488 |
| Change in Plan Assets: | | | |
| Fair value of plan assets, beginning of year | \$ 3,486,533 | \$ 717,335 | \$ 4,203,868 |
| University contributions | 35,045 | 32,056 | 67,101 |
| Plan participants' contributions | 156 | 11,186 | 11,342 |
| Actual return on plan assets | (165,058) | (12,612) | (177,670) |
| Benefits paid | (117,908) | (35,594) | (153,502) |
| Fair value of plan assets, end of year | \$ 3,238,768 | \$ 712,371 | \$ 3,951,139 |
| Funded status, end of year | \$ 141,900 | \$ 130,449 | \$ 272,349 |
| Other retirement programs | | | 170,889 |
| | | | 443,238 |
| Plan with fair value of plan assets in excess of PBO* | | | 23,367 |
| ACCRUED RETIREMENT BENEFITS | | | \$ 466,605 |

* Included in Other assets on the Consolidated Statements of Financial Position

The Accumulated Benefit Obligation for the Pension Benefits was \$2,952,298,000 and \$3,137,299,000 at June 30, 2023 and 2022, respectively.

For the year ended June 30, 2023, the primary drivers of the net actuarial gains in the Benefit Obligations were increases in the weighted average discount rates from 4.74% to 5.48% for Pension and from 4.96% to 5.59% for Other Postretirement. For the year ended June 30, 2022, the primary drivers of the net actuarial gains in the Benefit Obligations were increases in the weighted average discount rates from 3.04% to 4.74% for Pension and from 3.29% to 4.96% for Other Postretirement.

Net Periodic Benefit Cost

The components of net periodic benefit cost for pension benefits and other postretirement benefits are detailed below (in thousands). In the Consolidated Statements of Activities, service cost is reported as Compensation and benefits while the remaining components of net periodic benefit cost are reported as Pension, OPEB and other, net.

| | Pension Benefits | Other Postretirement Benefits | Total |
|----------------------------------|---------------------|-------------------------------------|------------------|
| 2023 | | | |
| Service cost | \$ 51,435 | \$ 26,954 | \$ 78,389 |
| Interest cost | 160,960 | 41,039 | 201,999 |
| Expected return on plan assets | (183,109) | (53,386) | (236,495) |
| Amortization of: | | | |
| Net prior service cost/(credit) | | (325) | (325) |
| Net losses | 619 | (6,219) | (5,600) |
| Net periodic benefit cost | \$ 29,905 | \$ 8,063 | \$ 37,968 |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| 2022 | Pension Benefits | Other Postretirement Benefits | Total |
|----------------------------------|-----------------------------|--|------------------|
| Service cost | \$ 76,716 | \$ 43,127 | \$ 119,843 |
| Interest cost | 124,362 | 35,617 | 159,979 |
| Expected return on plan assets | (208,682) | (53,884) | (262,566) |
| Amortization of: | | | |
| Net prior service cost/(credit) | | (339) | (339) |
| Net losses | 22,643 | 311 | 22,954 |
| Net periodic benefit cost | \$ 15,039 | \$ 24,832 | \$ 39,871 |

Net Assets Without Donor Restrictions

The University recorded the following year-end valuation adjustments to its Pension and Other Postretirement Benefit Plans in Pension, OPEB and other, net in the Consolidated Statements of Activities (in thousands):

| 2023 | Pension Benefits | Other Postretirement Benefits | Total |
|--|-----------------------------|--|---------------------|
| Net Assets Without Donor Restrictions: | | | |
| Net actuarial (gain)/loss | \$ (14,769) | \$ (200,261) | \$ (215,030) |
| Net prior service cost/(credit) | | (1,322) | (1,322) |
| Total | \$ (14,769) | \$ (201,583) | \$ (216,352) |
| Adjustment to net assets without donor restrictions (gain)/loss | \$ (136,584) | \$ (27,656) | \$ (164,240) |

| 2022 | Pension Benefits | Other Postretirement Benefits | Total |
|--|-----------------------------|--|---------------------|
| Net Assets Without Donor Restrictions: | | | |
| Net actuarial (gain)/loss | \$ 121,815 | \$ (172,280) | \$ (50,465) |
| Net prior service cost/(credit) | | (1,647) | (1,647) |
| Total | \$ 121,815 | \$ (173,927) | \$ (52,112) |
| Adjustment to net assets without donor restrictions (gain)/loss | \$ (529,518) | \$ (241,137) | \$ (770,655) |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Actuarial Assumptions

The expected long-term rate of return on plan assets is management's best estimate of the average investment return expected to be received on the assets invested in the plan over the benefit period. The expected long-term rate of return on plan assets has been established by considering historical and future expected returns of the asset classes invested in by the pension trust, and the allocation strategy currently in place among those classes.

| | Pension Benefits | | Other Postretirement Benefits | |
|---|------------------|-------------|-------------------------------|-------------|
| Weighted-Average Assumptions Used to Determine Benefit Obligations at Year End | | | | |
| | 2023 | 2022 | 2023 | 2022 |
| Discount rate | 5.48% | 4.74% | 5.59% | 4.96% |
| Salary increase | 3.19% | 3.17% | N/A | N/A |
| Weighted-Average Assumptions Used to Determine Net Periodic Benefit Cost | | | | |
| | | | | |
| Discount rate | 5.07% | 3.12% | 4.98% | 3.32% |
| Expected long-term return on plan assets | 6.85% | 6.77% | 7.50% | 7.50% |
| Salary increase | 3.19% | 3.21% | N/A | N/A |
| Assumed Health Care Cost Trend Rates | | | | |
| | | | | |
| Initial trend rate | N/A | N/A | 5.95% | 6.20% |
| Ultimate trend rate | N/A | N/A | 4.69% | 4.70% |
| Fiscal year end that ultimate trend rate is reached | N/A | N/A | 2046 | 2046 |

Expected Contributions

The University expects to contribute \$19,015,000 and \$31,737,000 for pension benefits and other postretirement benefits, respectively, during the fiscal year ending June 30, 2024.

Expected Benefits Payments (in thousands):

| Expected benefit payments for the year ending: | Other Postretirement Benefits before Medicare Part D Subsidy | | |
|--|--|-------------------------|-------------------------|
| | Pension Benefits | Medicare Part D Subsidy | Medicare Part D Subsidy |
| June 30, 2024 | \$ 159,953 | \$ 33,855 | \$ 75 |
| June 30, 2025 | 164,289 | 35,796 | 78 |
| June 30, 2026 | 172,434 | 37,830 | 81 |
| June 30, 2027 | 180,362 | 40,028 | 83 |
| June 30, 2028 | 188,303 | 42,096 | 84 |
| June 30, 2029 to June 30, 2033 | 1,042,993 | 241,978 | 422 |

Plan Assets and Allocations

The principal investment objectives for the pension and other postretirement benefits plans are to ensure the availability of funds to pay pension benefits as they become due under a broad range of future economic scenarios, to maximize long-term investment returns with an acceptable level of risk based on the pension obligations, and to invest the pension trust in a diversified manner.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The University's Office of Investments is responsible for the day-to-day management of the majority of the investments of the pension and other postretirement benefits. The investments are made in accordance with policies set out by the Investment Board which has been appointed by the Trustees. The pension and other postretirement benefit investments are similar in nature to those investments discussed in Notes 1 and 6 – Investments, at Fair Value. However, the actual allocations to specific investments within each asset class may vary due to certain restrictions imposed by investment managers and ERISA regulations.

A summary of plan assets, measured at fair value, as of June 30, 2023 and 2022, is as follows (in thousands):

Pension Benefits:

| 2023 | Level 1 | Level 2 | Level 3 | Investments at NAV | Total |
|---|---------------------|--------------------|-----------------|-------------------------------|---------------------|
| Assets: | | | | | |
| Short-term | \$ 118,081 | | | | \$ 118,081 |
| Equity: | | | | | |
| US equities | 44,344 | | | \$ 136,200 | 180,544 |
| International equities | 11,611 | | | 157,063 | 168,674 |
| Emerging market equities | 871 | | | 31,794 | 32,665 |
| Debt: | | | | | |
| US treasuries | 1,321,335 | | | | 1,321,335 |
| Corporate bonds | 16,597 | \$ 23 | | | 16,620 |
| Absolute return | | | | 596,572 | 596,572 |
| Real assets | 16,784 | | | 171,690 | 188,474 |
| Private equity | | | | 507,400 | 507,400 |
| Total assets | \$ 1,529,623 | \$ 23 | \$ - | \$ 1,600,719 | \$ 3,130,365 |
| Liabilities: | | | | | |
| Derivative instruments | | \$ 12,972 | | | \$ 12,972 |
| Total liabilities | \$ - | \$ 12,972 | \$ - | \$ - | \$ 12,972 |
| Fair value of plan assets, end of year | \$ 1,529,623 | \$ (12,949) | \$ - | \$ 1,600,719 | \$ 3,117,393 |
| 2022 | | | | | |
| | Level 1 | Level 2 | Level 3 | Investments at NAV | Total |
| Assets: | | | | | |
| Short-term | \$ 267,580 | | | | \$ 267,580 |
| Equity: | | | | | |
| US equities | 43,294 | | | \$ 133,219 | 176,513 |
| International equities | 28,495 | | | 196,037 | 224,532 |
| Emerging market equities | 901 | | | 166,740 | 167,641 |
| Debt: | | | | | |
| US treasuries | 893,167 | | | | 893,167 |
| Corporate bonds | 106,109 | \$ 21 | | | 106,130 |
| Absolute return | | | | 662,583 | 662,583 |
| Real assets | 47,628 | | \$ 1,419 | 170,741 | 219,788 |
| Private equity | | | | 520,834 | 520,834 |
| Fair value of plan assets, end of year | \$ 1,387,174 | \$ 21 | \$ 1,419 | \$ 1,850,154 | \$ 3,238,768 |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Other Postretirement Benefits:

| 2023 | Level 1 | Level 2 | Level 3 | Investments at NAV | Total |
|---|------------------|----------------|----------------|-------------------------------|-------------------|
| Assets: | | | | | |
| Short-term | \$ 34,995 | | | | \$ 34,995 |
| Equity: | | | | | |
| US equities | 6,383 | | | \$ 57,639 | 64,022 |
| International equities | | | | 104,523 | 104,523 |
| Emerging market equities | | | | 47,795 | 47,795 |
| Debt: | | | | | |
| US treasuries | 17,182 | | | | 17,182 |
| Corporate bonds | | | | | |
| Absolute return | | | | 230,496 | 230,496 |
| Real assets | 27,378 | | | 75,690 | 103,068 |
| Private equity | | | | 153,905 | 153,905 |
| Total assets | \$ 85,938 | \$ - | \$ - | \$ 670,048 | \$ 755,986 |
| Liabilities: | | | | | |
| Derivative instruments | | \$ 56 | | | \$ 56 |
| Total liabilities | \$ - | \$ 56 | \$ - | \$ - | \$ 56 |
| Fair value of plan assets, end of year | \$ 85,938 | \$ (56) | \$ - | \$ 670,048 | \$ 755,930 |

| 2022 | Level 1 | Level 2 | Level 3 | Investments at NAV | Total |
|---|------------------|-----------------|----------------|-------------------------------|-------------------|
| Assets: | | | | | |
| Short-term | \$ 41,712 | | | | \$ 41,712 |
| Equity: | | | | | |
| US equities | 6,235 | | | \$ 52,670 | 58,905 |
| International equities | | | | 82,149 | 82,149 |
| Emerging market equities | | | | 49,845 | 49,845 |
| Debt: | | | | | |
| US treasuries | 17,436 | | | | 17,436 |
| Corporate bonds | | | | | - |
| Absolute return | | | | 213,457 | 213,457 |
| Real assets | 26,751 | | \$ 455 | 71,086 | 98,292 |
| Private equity | | | | 150,704 | 150,704 |
| Total assets | \$ 92,134 | \$ - | \$ 455 | \$ 619,911 | \$ 712,500 |
| Liabilities: | | | | | |
| Derivative instruments | | \$ 129 | | | \$ 129 |
| Total liabilities | \$ - | \$ 129 | \$ - | \$ - | \$ 129 |
| Fair value of plan assets, end of year | \$ 92,134 | \$ (129) | \$ 455 | \$ 619,911 | \$ 712,371 |

As of June 30, 2023, the University has unfunded commitments to limited partnerships totaling \$442,619,000, which are expected to be called over the next 5 years.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Plan asset allocations by category are as follows:

| 2023 Allocation of Plan Assets | Pension Benefits | | Other Postretirement Benefits | |
|-----------------------------------|------------------|---------------|-------------------------------|---------------|
| | Target | Actual | Target | Actual |
| Short-term | 0.0% | 3.4% | 0.0% | 4.6% |
| Equity: | | | | |
| US equities | 5.1% | 5.8% | 9.0% | 8.5% |
| International equities | 5.8% | 5.4% | 12.0% | 13.8% |
| Emerging markets equities | 5.7% | 1.1% | 9.0% | 6.3% |
| Debt: | | | | |
| US treasuries | 34.0% | 42.4% | 5.0% | 2.3% |
| Corporate bonds | 0.0% | 0.5% | 0.0% | 0.0% |
| Absolute return | 20.5% | 19.1% | 29.0% | 30.5% |
| Real assets | 9.3% | 6.0% | 16.0% | 13.6% |
| Private equity | 19.6% | 16.3% | 20.0% | 20.4% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

12. DEBT OBLIGATIONS

Debt obligations at June 30, 2023 and 2022 are as follows (in thousands):

| | Final Maturity | Effective Interest Rate at June 30, 2023 | 2023 | 2022 |
|---|-------------------|--|---------------------|---------------------|
| Academic Component: | | | | |
| <u>Fixed rate debt obligations:</u> | | | | |
| The Trustees of the University of Pennsylvania | | | | |
| Series A of 2020 Taxable Bonds | 10/2050 | 2.40% | \$ 300,000 | \$ 300,000 |
| Series A of 2019 revenue bonds | 02/2119 | 3.61% | 300,000 | 300,000 |
| Series 2012 Taxable Bonds | 09/2112 | 4.67% | 300,000 | 300,000 |
| Pennsylvania Higher Educational Facilities Authority (PHEFA) | | | | |
| Series B of 2019 revenue bonds | 08/2045 | 2.40% - 2.97% | 213,585 | 213,585 |
| Series A of 2018 revenue bonds | 02/2048 | 2.28% - 4.70% | 172,180 | 176,410 |
| Series A of 2017 revenue bonds | 08/2046 | 2.26% - 3.72% | 178,395 | 178,395 |
| Series A of 2016 revenue bonds | 08/2041 | 1.54% - 2.93% | 117,465 | 118,360 |
| Series A of 2015 revenue bonds | 10/2045 | 1.99% - 2.63% | 33,665 | 38,775 |
| Series B of 2015 revenue bonds | 10/2038 | 1.99% - 3.38% | 132,055 | 145,110 |
| Series C of 2015 revenue bonds | 10/2035 | 3.680% | 8,020 | 8,020 |
| Other loans | 05/2031 | 3.00% - 5.53% | 19,225 | 19,659 |
| <u>Variable rate debt obligation:</u> | | | | |
| Washington County Authority Series of 2004 | 07/2034 | 3.88% | 40,700 | 43,700 |
| Total Academic Component outstanding bonds payable | | | 1,815,290 | 1,842,014 |
| Unamortized issuance costs, premiums and discounts, net | | | 46,882 | 52,562 |
| Total Academic Component debt obligations | | | \$ 1,862,172 | \$ 1,894,576 |
| UPHS: | | | | |
| <u>Fixed rate debt obligations:</u> | | | | |
| Lancaster County Hospital Authority (LCHA) | | | | |
| Series A of 2016 revenue bonds | 08/2042 | 1.90% - 3.52% | \$ 142,915 | \$ 147,640 |
| Series B of 2016 revenue bonds | 08/2046 | 1.86% - 3.58% | 107,890 | 119,485 |
| PHEFA | | | | |
| Series A of 2021 revenue bonds | 08/2044 | 1.61% - 2.11% | 79,810 | 79,810 |
| Series B of 2021 revenue bonds | 08/2042 | 0.82% - 2.70% | 109,735 | 109,735 |
| Series A of 2019 revenue bonds | 08/2049 | 1.67% - 3.22% | 534,870 | 534,870 |
| Series A of 2017 revenue bonds | 08/2047 | 2.60% - 3.68% | 400,000 | 400,000 |
| Series C of 2016 revenue bonds | 08/2041 | 1.43% - 3.08% | 124,255 | 127,800 |
| Series A of 2015 revenue bonds | 08/2045 | 2.22% - 4.00% | 194,245 | 209,870 |
| Series A of 2012 revenue bonds | 08/2042 | | - | 8,305 |
| New Jersey Health Care Facilities Financing Authority (NJHCFFA) | | | | |
| Princeton Healthcare System Series A of 2016 | 07/2039 | 2.08% - 3.88% | 157,075 | 162,875 |
| University of Pennsylvania Health System Taxable Note | 08/2047 | 4.01% | 200,000 | 200,000 |
| Lancaster General Hospital 2015 Taxable Note | 08/2032 | 2.25% | 60,453 | 62,518 |
| Mortgages, notes and other | Various | Various | 95,500 | 96,591 |
| <u>Variable rate debt obligations:</u> | | | | |
| PHEFA Series A of 2008 revenue bonds | 01/2038 | 3.47% | 69,995 | 69,995 |
| NJHCFFA Princeton Healthcare System Series B of 2016 | 07/2045 | 4.66% | 65,000 | 65,000 |
| NJHCFFA Princeton Healthcare System Series C of 2016 | 07/2045 | 4.61% | 20,000 | 20,000 |
| Total UPHS outstanding bonds payable | | | 2,361,743 | 2,414,494 |
| Unamortized issuance costs, premiums and discounts, net | | | 169,604 | 183,158 |
| Total UPHS debt obligations | | | 2,531,347 | 2,597,652 |
| TOTAL DEBT OBLIGATIONS | | | \$ 4,393,519 | \$ 4,492,228 |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Contractual maturities of debt obligations are as follows (in thousands):

| Fiscal Year | Academic Component | UPHS | Total |
|--|-----------------------|---------------------|---------------------|
| 2024 | \$ 32,151 | \$ 66,768 | \$ 98,919 |
| 2025 | 29,128 | 64,272 | 93,400 |
| 2026 | 44,537 | 67,279 | 111,816 |
| 2027 | 30,923 | 69,513 | 100,436 |
| 2028 | 32,290 | 65,523 | 97,813 |
| Thereafter | 1,646,261 | 2,028,388 | 3,674,649 |
| Total Principal | 1,815,290 | 2,361,743 | 4,177,033 |
| Unamortized issuance costs, premiums & discounts | 46,882 | 169,604 | 216,486 |
| TOTAL DEBT OBLIGATIONS | \$ 1,862,172 | \$ 2,531,347 | \$ 4,393,519 |

To secure certain self-insured liabilities, the University has letters of credit with various financial institutions totaling \$14,268,000 and \$12,557,000 at June 30, 2023 and 2022, respectively, of which \$4,971,000 and \$4,709,000 were issued under a line of credit. The letters of credit have evergreen provisions for automatic renewal. There have been no draws under the letters of credit.

Academic Component

The University has variable rate debt in the amount of \$40,700,000 which is subject to optional tender by the holders upon seven days' notice. These bonds are reflected in the table above based on original scheduled maturities. In the event that the University receives notice of any optional tender on its variable rate demand bonds, the purchase price will be repaid from the remarketing of the bonds. However, in the event that the entire remarketing effort were to fail, the University would have the general obligation to purchase the bonds.

On June 14, 2021, the University entered into a new five-year agreement with a financial institution to provide a line of credit in the amount of \$100,000,000 for general purposes of the University. The University pays a fee annually on the unused amount of the line of credit. There were no outstanding balances as of June 30, 2023 and 2022.

UPHS

The PHEFA Revenue Bonds, Lancaster County Hospital Authority (LCHA) Revenue Bonds and New Jersey Health Care Facilities Financing Authority (NJHCFFA) Revenue Bonds are secured by master notes issued under the UPHS Master Trust Indenture (MTI). The MTI and related agreements contain certain restrictive covenants which limit the issuance of additional indebtedness, and among other things, require UPHS to meet an annual debt service coverage requirement of "income available for debt service" (excess of revenue over expenses plus depreciation, amortization, interest expense and extraordinary items) at an amount equal to 110% of the annual debt service requirements. If the coverage requirement for a particular year is not met, within six months of the close of that fiscal year, UPHS must retain the services of a consultant to make recommendations to improve the coverage requirement. UPHS must also implement the recommendations of the consultant to the extent that they can be feasibly implemented. UPHS will not be considered to be in default of the provisions of the MTI so long as UPHS has sufficient cash flow to pay total operating expenses and debt service for the fiscal year. In both 2023 and 2022, UPHS met its debt service coverage requirement under the MTI. Additionally, UPHS has pledged its gross revenues to secure its obligation under the MTI.

On August 1, 2022, the University executed an agreement to facilitate the extension of the Lancaster General Hospital ("LGH") 2015 Taxable Note with an aggregate principal amount not to exceed \$62,525,000. The LGH 2015

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Taxable Note was extended for a ten-year period with a maturity date of August 1, 2032, with a fixed interest rate of 2.25%.

On May 18, 2022, Pennsylvania Higher Educational Facilities Authority (PHEFA) issued Series B of 2021 Refunding Revenue Bonds (PHEFA 2021B bonds), which was a forward delivery, with an aggregate principal amount of \$109,735,000. The proceeds were used to fund an escrow which was used to refund \$122,275,000 from the PHEFA Series A of 2012 revenue bonds. The refunded bonds were legally defeased and are no longer included among UPHS' reported liabilities. Interest on the PHEFA 2021B bonds is fixed with coupons ranging between 0.82% and 2.70%. As a result of the legal defeasance of debt associated with the issuance of PHEFA 2021B bonds, the University reported a gain on early extinguishment of debt in Pension, OPEB and other, net on the Consolidated Statement of Activities in the amount of \$3,398,000 for the year ended June 30, 2022.

UPHS has certain variable rate debt in the amount of \$69,995,000 which is subject to optional tender by the holders upon seven days' notice. These bonds are reflected in the debt obligations maturity table above based on original scheduled maturities. In the event that UPHS receives notice of any optional tender on its variable rate demand bonds, the purchase price will be repaid from the remarketing of the bonds. However, in the event that the entire remarketing effort were to fail, UPHS has in place a renewable direct pay letter of credit issued by Bank of America with an original expiration date of April 15, 2023, which has been extended through April 15, 2028. In the event that the letter of credit cannot be drawn upon, UPHS would have the general obligation to purchase the bonds.

UPHS maintains a \$100,000,000 line of credit with a maturity date of April 12, 2025 to supplement liquidity and issue letters of credit to cover balances due on construction projects and reinsurance agreements. There were no outstanding balances as of June 30, 2023 and 2022.

Interest Rate Swap Agreements

The University enters into interest rate swap agreements to synthetically modify the interest rate terms of its long-term debt portfolio. These agreements are not entered into for trading or speculative purposes. Fair value of these agreements is determined by obtaining quotes from Goldman Sachs Mitsui Marine Derivative Products, L.P. (GSMMDP) and Merrill Lynch, respectively, which are based on the income approach, using observable market data to discount future net payment streams. Accordingly, the University considers this to be a Level 2 measurement. The quotes provided also represent the amount the University would accept or be required to pay to transfer the agreement to GSMMDP and Merrill Lynch, respectively, or exit price as defined by the Fair Value Measurements standard. The University also takes into account the risk of nonperformance.

The following table summarizes the terms of the University's remaining interest rate swap agreements (in thousands):

| | Academic Component | | UPHS | | |
|------------------|-------------------------|-------------|-------------|-------------------------|--|
| Notional Amounts | \$ 99,150 | \$ 3,140 | \$ 3,140 | \$ 19,525 | |
| Trade Date | 11/6/2007 | 7/15/2009 | 1/7/2010 | 7/28/2006 | |
| Maturity Date | 7/1/2034 | 8/15/2023 | 8/15/2023 | 7/1/2041 | |
| Rates: | | | | | |
| Receive | 67% of 1-Month LIBOR | 3.184% | 2.902% | 70% of 1-Month LIBOR | |
| Pay | 3.573% | SIFMA Index | SIFMA Index | 3.980% | |

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table summarizes the fair value of the interest rate swap agreements, not designated as hedging instruments, as of June 30, 2023 and 2022, and the related gains on the interest rate swap agreements, both realized and unrealized, for the years ended June 30, 2023 and 2022 (in thousands):

| Line Item | | 2023 | 2022 |
|---|--|-----------------|------------------|
| Consolidated Statements of Financial Position: | | | |
| Asset interest rate swaps: | | | |
| UPHS | Other assets | \$ - | \$ 110 |
| Total asset interest rate swaps | | \$ - | \$ 110 |
| Liability interest rate swaps: | | | |
| Academic Component | Accrued expenses and other liabilities | \$ 5,172 | \$ 10,248 |
| UPHS | Accrued expenses and other liabilities | 2,246 | 3,506 |
| Total liability interest rate swaps | | \$ 7,418 | \$ 13,754 |
| Consolidated Statements of Activities: | | | |
| Academic Component | Return on investments, net | \$ 3,956 | \$ 7,934 |
| UPHS | Return on investments, net | 1,150 | 2,264 |
| Total | | \$ 5,106 | \$ 10,198 |

13. NET ASSETS

The major components of net assets at June 30, 2023 and 2022 are as follows (in thousands):

| | Without donor restrictions | With donor restrictions | Total |
|-------------------------------------|----------------------------|-------------------------|----------------------|
| 2023 | | | |
| General operating | \$ 7,722,223 | \$ 819,419 | \$ 8,541,642 |
| Sponsored programs | 42,320 | | 42,320 |
| Capital | | 146,938 | 146,938 |
| Student loans | 5,748 | | 5,748 |
| Planned giving agreements | | 54,281 | 54,281 |
| Quasi-endowment | 11,044,431 | | 11,044,431 |
| Endowment, subject to spending rule | | 4,774,969 | 4,774,969 |
| Endowment, held in perpetuity | | 5,143,541 | 5,143,541 |
| TOTAL NET ASSETS | \$ 18,814,722 | \$ 10,939,148 | \$ 29,753,870 |
| 2022 | | | |
| General operating | \$ 7,075,269 | \$ 744,870 | \$ 7,820,139 |
| Sponsored programs | 53,805 | | 53,805 |
| Capital | | 216,955 | 216,955 |
| Student loans | 6,246 | | 6,246 |
| Planned giving agreements | | 53,691 | 53,691 |
| Quasi-endowment | 10,672,892 | | 10,672,892 |
| Endowment, subject to spending rule | | 5,099,668 | 5,099,668 |
| Endowment, held in perpetuity | | 4,951,791 | 4,951,791 |
| TOTAL NET ASSETS | \$ 17,808,212 | \$ 11,066,975 | \$ 28,875,187 |

14. OTHER INCOME

The components of Other income for the years ended June 30, 2023 and 2022, are as follows (in thousands):

| | 2023 | 2022 |
|---|---------------------|---------------------|
| Commercialization of intellectual property* | \$ 637,467 | \$ 1,258,637 |
| UPHS ambulatory pharmacy | 868,480 | 717,287 |
| Government relief funding | 21,257 | 60,387 |
| Other | 655,281 | 595,796 |
| TOTAL OTHER INCOME | \$ 2,182,485 | \$ 2,632,107 |

*Net of distributions to external parties

15. LEASES

The University leases research labs and office space under operating leases expiring through December 2043. On the Consolidated Statements of Financial Position, lessees are required to record Right-of-Use assets, representing the right to use the underlying assets for the lease term, and Lease liabilities, representing the obligation to make lease payments arising from the lease based on the present value of lease payments over the lease term. The University has made the following elections: (1) to adopt a package of practical expedients relating to reassessment, (2) to exclude leases with a term of less than one year, and (3) to use an incremental borrowing rate for discounting leases, as applicable. At June 30, 2023 and 2022, Right-of-Use assets recorded in Other assets were \$556,028,000 and \$489,323,000, respectively, and Lease liabilities recorded in Accrued expenses and other liabilities were \$571,002,000 and \$503,880,000, respectively. At June 30, 2023, the weighted average remaining lease term was 10.9 years and the weighted average discount rate was 2.8%. At June 30, 2022, the weighted average remaining lease term was 9.2 years and the weighted average discount rate was 2.3%. Rental expense, for the years ended June 30, 2023 and 2022, totaled \$153,907,000 and \$148,595,000 (including amortizations related to Right-of-Use assets and Lease liabilities of \$78,544,000 and \$75,758,000), respectively. Rental expense is included in Other operating expenses on the Consolidated Statements of Activities.

Future maturities of total lease liabilities at June 30, 2023 are as follows (in thousands):

| | |
|------------------------------------|-------------------|
| Year ending June 30, | |
| 2024 | \$ 83,931 |
| 2025 | 83,620 |
| 2026 | 74,407 |
| 2027 | 63,734 |
| 2028 | 57,033 |
| Thereafter | 348,815 |
| Total lease payments | \$ 711,540 |
| Less imputed interest | (140,538) |
| Total Future lease payments | \$ 571,002 |

16. FUNCTIONAL CLASSIFICATION OF EXPENDITURES

Expenses for the years ended June 30, 2023 and 2022 are categorized on a functional basis as follows (in thousands):

| | Instruction, student services & academic support | Hospital & physician practices | Research | Institutional support | Enterprises & independent operations | Total |
|---------------------------------------|--|-----------------------------------|---------------------|--------------------------|--|----------------------|
| 2023 | | | | | | |
| Compensation and benefits | \$ 1,244,495 | \$ 5,328,699 | \$ 621,319 | \$ 307,415 | \$ 240,786 | \$ 7,742,714 |
| Depreciation and amortization | 94,400 | 414,521 | 52,167 | 21,809 | 67,354 | 650,251 |
| Interest on indebtedness | 17,158 | 81,549 | 26,932 | 203 | 13,899 | 139,741 |
| Other operating expense | 650,914 | 3,910,686 | 454,109 | 97,784 | 210,949 | 5,324,442 |
| Total operating expense | 2,006,967 | 9,735,455 | 1,154,527 | 427,211 | 532,988 | 13,857,148 |
| Non-service net periodic benefit cost | (6,499) | (27,818) | (3,242) | (1,605) | (1,257) | (40,421) |
| Total | \$ 2,000,468 | \$ 9,707,637 | \$ 1,151,285 | \$ 425,606 | \$ 531,731 | \$ 13,816,727 |
| | | | | | | |
| | Instruction, student services & academic support | Hospital & physician practices | Research | Institutional support | Enterprises & independent operations | Total |
| 2022 | | | | | | |
| Compensation and benefits | \$ 1,108,535 | \$ 5,053,976 | \$ 551,364 | \$ 279,727 | \$ 215,684 | \$ 7,209,286 |
| Depreciation and amortization | 96,489 | 387,958 | 50,769 | 21,325 | 66,916 | 623,457 |
| Interest on indebtedness | 17,387 | 69,468 | 26,925 | 185 | 14,032 | 127,997 |
| Other operating expense | 594,544 | 3,528,636 | 422,024 | 76,664 | 186,027 | 4,807,895 |
| Total operating expense | 1,816,955 | 9,040,038 | 1,051,082 | 377,901 | 482,659 | 12,768,635 |
| Non-service net periodic benefit cost | (12,301) | (56,060) | (6,118) | (3,103) | (2,391) | (79,973) |
| Total | \$ 1,804,654 | \$ 8,983,978 | \$ 1,044,964 | \$ 374,798 | \$ 480,268 | \$ 12,688,662 |

Operation and maintenance of PPE and depreciation are allocated to functional classifications based on square footage. Interest expense is generally allocated to functional classifications of the activity that directly benefited from the proceeds of the debt. Non-service net periodic benefit cost is allocated to functional classifications based on compensation and benefits.

17. LIQUIDITY AND AVAILABILITY

As of June 30, 2023 and 2022, respectively, financial assets and liquidity resources available within one year for general expenditure, such as operating expenses, scheduled principal payments on debt and capital construction costs not financed with debt, were as follows (in thousands):

| | 2023 | 2022 |
|---|----------------------|----------------------|
| Financial assets: | | |
| Cash & cash equivalents | \$ 3,217,099 | \$ 3,163,942 |
| Receivables, net | 1,620,356 | 1,809,271 |
| Pledge payments available for operations | 77,478 | 79,634 |
| Investments | 7,637,515 | 7,657,637 |
| Total financial assets available within one year | 12,552,448 | 12,710,484 |
| Liquidity resources: | | |
| Bank lines of credit | 195,029 | 195,291 |
| Total financial assets and liquidity resources available within one year | \$ 12,747,477 | \$ 12,905,775 |

The University's cash flows have seasonal variations during the year attributable to tuition billing, patient service reimbursement and a concentration of contributions received at calendar and fiscal year-end. To manage liquidity, the University maintains lines of credit with several banks that are drawn upon as needed during the year to manage cash flows. Management has the discretion to utilize the full amount of quasi-endowment funds for general expenditures.

18. SUBSEQUENT EVENTS

The University has evaluated subsequent events for the period from June 30, 2023 through September 28, 2023, the date the consolidated financial statements were issued.

Schedule of Expenditures of Federal Awards

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|--|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| DEPARTMENT OF AGRICULTURE | | | | | | | | |
| AGRICULTURAL RESEARCH - BASIC AND APPLIED RESEARCH | 10.001 | CRDF GLOBAL | 59-0210-6-004 | \$ 193,755 | Research and Development | \$ 920,364,194 | \$ - | \$ 884 |
| AGRICULTURAL RESEARCH - BASIC AND APPLIED RESEARCH | 10.001 | CRDF GLOBAL | 59-0210-8-184 | \$ 193,755 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,252 |
| AGRICULTURAL RESEARCH - BASIC AND APPLIED RESEARCH | 10.001 | | | \$ 193,755 | Research and Development | \$ 920,364,194 | \$ - | \$ 176,619 |
| AGRICULTURE AND FOOD RESEARCH INITIATIVE (AFRI) | 10.310 | PENNSYLVANIA STATE UNIVERSITY | S002633-USDA | \$ 1,164,971 | Research and Development | \$ 920,364,194 | \$ - | \$ 69,576 |
| AGRICULTURE AND FOOD RESEARCH INITIATIVE (AFRI) | 10.310 | UNIVERSITY OF CONNECTICUT | 157077250 | \$ 1,164,971 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,819 |
| AGRICULTURE AND FOOD RESEARCH INITIATIVE (AFRI) | 10.310 | | | \$ 1,164,971 | Research and Development | \$ 920,364,194 | \$ 295,479 | \$ 1,002,640 |
| ANIMAL HEALTH AND DISEASE RESEARCH | 10.207 | | | \$ 81,335 | Research and Development | \$ 920,364,194 | \$ - | \$ 81,335 |
| COVID-19 - AGRICULTURE AND FOOD RESEARCH INITIATIVE (AFRI) | 10.310 | TEXAS A&M UNIVERSITY | M2003104 | \$ 1,164,971 | Research and Development | \$ 920,364,194 | \$ - | \$ 70,936 |
| MAINTENANCE OF MEMBERSHIP LABORATORY REQUIREMENTS | 10.8D | PENNSYLVANIA DEPARTMENT OF AGRICULTURE | 44229917 | \$ 63,446 | Research and Development | \$ 920,364,194 | \$ - | \$ 63,446 |
| PLANT AND ANIMAL DISEASE, PEST CONTROL, AND ANIMAL CARE | 10.025 | COMMONWEALTH OF PENNSYLVANIA | 44229531 | \$ 278,713 | Research and Development | \$ 920,364,194 | \$ - | \$ 107,537 |
| PLANT AND ANIMAL DISEASE, PEST CONTROL, AND ANIMAL CARE | 10.025 | | | \$ 278,713 | Research and Development | \$ 920,364,194 | \$ - | \$ 171,176 |
| STATE ADMINISTRATIVE MATCHING GRANTS FOR THE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM | 10.561 | PENNSYLVANIA STATE UNIVERSITY | S002470-COP-UNI | \$ 937,033 | SNAP CLUSTER | \$ 937,033 | \$ - | \$ 222,829 |
| STATE ADMINISTRATIVE MATCHING GRANTS FOR THE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM | 10.561 | PENNSYLVANIA STATE UNIVERSITY | S003655-COP-UNI | \$ 937,033 | SNAP CLUSTER | \$ 937,033 | \$ - | \$ 714,204 |
| DEPARTMENT OF AGRICULTURE Total | | | | | | | \$ 295,479 | \$ 2,719,253 |
| DEPARTMENT OF COMMERCE | | | | | | | | |
| ARRANGEMENTS FOR INTERDISCIPLINARY RESEARCH INFRASTRUCTURE | 11.619 | UNIVERSITY OF DELAWARE | PC3.I-121 | \$ 79,564 | Research and Development | \$ 920,364,194 | \$ - | \$ 62,346 |
| COVID-19 - ARRANGEMENTS FOR INTERDISCIPLINARY RESEARCH INFRASTRUCTURE | 11.619 | UNIVERSITY OF DELAWARE | UDR0000086 | \$ 79,564 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,218 |
| MEASUREMENT AND ENGINEERING RESEARCH AND STANDARDS | 11.609 | IOWA STATE UNIVERSITY | 022284H | \$ 59,372 | Research and Development | \$ 920,364,194 | \$ - | \$ 59,372 |
| SEA GRANT SUPPORT | 11.417 | PENNSYLVANIA STATE UNIVERSITY | S003815-NOAA | \$ 36,757 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,757 |
| DEPARTMENT OF COMMERCE Total | | | | | | | \$ - | \$ 175,693 |
| DEPARTMENT OF DEFENSE | | | | | | | | |
| ACOUSTOELECTRIC AMPLIFIERS FOR EFFICIENT RADIO FREQUENCY SIGNAL PROCES | 12.8D | UES, INC. | S-215-020-004 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,507 |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | DUKE UNIVERSITY | 313-1122 | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ 293,058 |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | EMORY UNIVERSITY | A007760 | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ 409,576 |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | PURDUE UNIVERSITY | 13001075-010 | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ 139,392 |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | TULANE UNIVERSITY | TUL-SCC-553957-15/16 | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ (78) |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | UNIVERSITY OF ROCHESTER | SUB0000305 | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ 32,021 |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | UNIVERSITY OF TEXAS AT AUSTIN | UTA16-001254 | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ (17,046) |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | WRIGHT STATE UNIVERSITY | 669737-1 | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ 226,761 |
| AIR FORCE DEFENSE RESEARCH SCIENCES PROGRAM | 12.800 | | | \$ 2,921,021 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,837,337 |
| ALUMINUM SCANDIUM NITRIDE MEMS PDK | 12.8D | AKOUSTIS | SUB TO HR0011-21-9-0004 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 117,415 |
| BASIC AND APPLIED SCIENTIFIC RESEARCH | 12.300 | RENSELAER POLYTECHNIC INSTITUTE | A20-0047-S002 | \$ 6,944,447 | Research and Development | \$ 920,364,194 | \$ - | \$ 359,366 |
| BASIC AND APPLIED SCIENTIFIC RESEARCH | 12.300 | UNIVERSITY OF ILLINOIS | 099963-17889 | \$ 6,944,447 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,644 |
| BASIC AND APPLIED SCIENTIFIC RESEARCH | 12.300 | | | \$ 6,944,447 | Research and Development | \$ 920,364,194 | \$ 2,252,413 | \$ 6,571,437 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | CLEMSON UNIVERSITY | 2413-201-2012557 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,000 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | DREXEL UNIVERSITY | 940002 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 639,383 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | HARVARD UNIVERSITY | 124397-5121863 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,023 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | JOHNS HOPKINS UNIVERSITY | 2004717370 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 181,282 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | NORTHEASTERN UNIV | S04139-78050 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ (6,650) |
| BASIC SCIENTIFIC RESEARCH | 12.431 | NORTHEASTERN UNIV | TBD-78051 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 85,610 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | UNIVERSITY OF CALIFORNIA, SANTA BARBARA | KK1711 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 77,532 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | UNIVERSITY OF ROCHESTER | 417358 / URFAO-GRS10801 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 141,066 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-0005405 | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,689 |
| BASIC SCIENTIFIC RESEARCH | 12.431 | | | \$ 6,283,752 | Research and Development | \$ 920,364,194 | \$ 1,575,888 | \$ 5,042,817 |
| BASIC SCIENTIFIC RESEARCH - COMBATING WEAPONS OF MASS DESTRUCTION | 12.351 | | | \$ 893,942 | Research and Development | \$ 920,364,194 | \$ - | \$ 789,614 |
| BASIC, APPLIED, AND ADVANCED RESEARCH IN SCIENCE AND ENGINEERING | 12.630 | AUBURN UNIVERSITY | 21-ARCPAL-203229-UPENN | \$ 5,709,261 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,747 |
| BASIC, APPLIED, AND ADVANCED RESEARCH IN SCIENCE AND ENGINEERING | 12.630 | UNIVERSITY OF MASSACHUSETTS | S5133000044313 | \$ 5,709,261 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,995 |
| BASIC, APPLIED, AND ADVANCED RESEARCH IN SCIENCE AND ENGINEERING | 12.630 | UNIVERSITY OF VIRGINIA | GG12423.169006 | \$ 5,709,261 | Research and Development | \$ 920,364,194 | \$ - | \$ 686 |
| BASIC, APPLIED, AND ADVANCED RESEARCH IN SCIENCE AND ENGINEERING | 12.630 | | | \$ 5,709,261 | Research and Development | \$ 920,364,194 | \$ 3,571,438 | \$ 5,619,833 |
| BEHAVIORAL CHARACTERIZATION OF OODR DETECTION DOGS FOR SELECTION OF PO BETTER EXTRACTION FROM TEXT TOWARDS ENHANCED RETRIEVAL (BETTER) | 12.8D | BATTELLE MEMORIAL INSTITUTE | 769331 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 275,682 |
| BEHAVIORAL CHARACTERIZATION OF OODR DETECTION DOGS FOR SELECTION OF PO BETTER EXTRACTION FROM TEXT TOWARDS ENHANCED RETRIEVAL (BETTER) | 12.8D | BBN SYSTEMS AND TECHNOLOGIES | SUB TO 2019-19051600006 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 430,626 |
| BIO-FABRICATED NERVE-MUSCLE COMPLEXES TO AUGMENT REGENERATION AND FACI | 12.8D | PHILADELPHIA RESEARCH AND EDUCATION FOUNDATION | JPA | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,629 |
| CAIRO-MS: CONFLICTING ACCOUNT INFORMATION RESOURCES IN OMNIVOROUS MEDI | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ (42,382) | \$ 484,542 |
| CIRCULATING CFDNA FRAGMENTS FOR THE DETECTION AND DIAGNOSIS OF TRAUMAT | 12.8D | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000206 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ 334,728 | \$ 601,680 |
| COLLECTIVE LIFELONG LEARNING BY DISTRIBUTED AGENTS | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 69,038 |
| CONSTRAINED TOMOGRAPHY WITH UNDERSAMPLED PROJECTIONS | 12.8D | EULER SCIENTIFIC | EUL-SPP-2022-002 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 97,680 |
| CONTOUR BASED IMAGE SEGMENTATION STR PHASE II | 12.8D | VY CORPORATION | SUB TO FA8750-20-C-0524 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 62,853 |
| CORPORA OF ANNOTATED EVENTS REPRESENTED UNDER SCHEMAS (CAERUS) | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,195,751 |
| COVID-19 - BASIC SCIENTIFIC RESEARCH - COMBATING WEAPONS OF MASS DESTRUCTION | 12.351 | | | \$ 893,942 | Research and Development | \$ 920,364,194 | \$ - | \$ 104,328 |
| COVID-19 - RESEARCH AND TECHNOLOGY DEVELOPMENT | 12.910 | WISTAR INSTITUTE | 36000-01-374-UPENN | \$ 5,308,722 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,311,198 |
| CROSS-DOMAIN TRANSFER LEARNING | 12.8D | LOCKHEED MARTIN CORPORATION | 410524680 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,802 |
| DESIGN AND PRODUCTION OF 3 NEW MRNA PRODUCTION PLASMD | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,000 |
| DOD PHASE II STR 12.A, TOPIC NO. A12A-T009 | 12.8D | CHARLES RIVER ANALYTICS, INC. | SC1906402 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,443 |
| ELECTROMECHANICAL COMPONENTS FOR EFFICIENT, SMALL SCALE POWER CONVERSI | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,863 |
| ENERGY-EFFICIENT VISION-BASED NAVIGATION THROUGH EVENT-BASED SENSING A | 12.8D | PURDUE UNIVERSITY | 13001103-096 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 203,752 |
| ENVIRONMENTALLY SUSTAINABLE ANALYSIS AND DESIGN SUPPORT AND MONITORING | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,291 |
| FERROELECTRIC ALUMINUM SCANDIUM NITRIDE MEMORY DEVICES AND INTEGRATION | 12.8D | UES, INC. | S-210-21M-001 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 270,822 |
| H6 TACTICAL-GRADE CLOCK | 12.8D | INTEL FEDERAL LLC | CW2085888 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,529 |
| HIGH-BAND OPERATION VIA PERIODIC STRUCTURES (HOPS) | 12.8D | AKOUSTIS | SUB TO HR0011221-9-0037 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 216,999 |
| HR001215007-08: THIRD-PARTY VERIFICATION OF COTS SOFTWARE COMPLIANC | 12.8D | LALAIH ASTOR TECHNICAL CONSULTING HOUSE, LLC | SUB TO W31P4Q-22-C-0010 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 208,058 |
| HUMAN INTERPRETABLE ATTRIBUTION OF TEXT USING UNDERLYING STRUCTURE (HI | 12.8D | RAYTHEON COMPANY | 4202707100 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,910 |
| HYPOTHESIS-GUIDED MODEL REVISION OVER MULTIPLE ALIGNED REPRESENTATIONS | 12.8D | PALO ALTO RESEARCH CENTER | P315541 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 169,581 |
| IMPROVING NEUROTRAUMA BY DEPOLARIZATION INHIBITION WITH COMBINATION TH | 12.8D | UNIVERSITY OF CINCINNATI | 013935-00002 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 84,170 |
| INTEGRATED QUANTUM INSPIRED PHOTONIC SOLVER (I-QIPS) | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 350,229 |
| INTEGRATED STATIC AND DYNAMIC APPROACHES TO HIGH-ASSURANCE FOR LEARNIN | 12.8D | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ 95,944 | \$ 732,896 |
| LINKING INVESTIGATIONS IN TRAUMA AND EMERGENCY SERVICES (LITES) | 12.8D | UNIVERSITY OF PITTSBURGH | 0058514-2 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 190,519 |
| LIQUID-FUEL THERMIONIC BATTLEFIELD GENERATORS | 12.8D | SPARK THERMIONICS | SUB TO W911QX22C0011 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 155,862 |
| MILITARY CONSTRUCTION, NATIONAL GUARD | 12.400 | | | \$ 302,503 | Research and Development | \$ 920,364,194 | \$ 47,519 | \$ 302,503 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | CASE WESTERN RESERVE UNIVERSITY | RES515708 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,875 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000254 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,745 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000404 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,919 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000453-XX | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,753 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | CITIZENS UNITED FOR RESEARCH IN EPILEPSY | CURE | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ 25,377 | \$ 56,782 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | DANA-FARBER CANCER INSTITUTE | 3086701 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,232 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | DENVER RESEARCH INSTITUTE | MSRC-FY19-02 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ 134,522 | \$ 277,931 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | DUKE UNIVERSITY | SUB TO W81XWH-14-1-0473 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ (9,448) |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | FOX CHASE CANCER CENTER | 22782-01 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,939 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | GEORGE WASHINGTON UNIVERSITY | 20-M20 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,963 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | GEORGETOWN UNIVERSITY | 413814_GRA13762-UPenn | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,171 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | HENRY M. JACKSON FOUNDATION | 5526 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,127 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | MICHIGAN STATE UNIVERSITY | RC110291UP | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,782 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | OREGON HEALTH & SCIENCE UNIVERSITY | 1008339_UPA | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,486 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | SHEBA MEDICAL CENTER | W81XWH2211081-B | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,464 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | THOMAS JEFFERSON UNIVERSITY | 080-27000-X18001 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,237 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES | FP 55722 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,591 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 10225sc | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,893 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 11330sc | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 104,763 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | UNIVERSITY OF CINCINNATI | 010376-003 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ (7,669) |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | UNIVERSITY OF ILLINOIS | 19019 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,533 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | UNIVERSITY OF MARYLAND | F302347-17 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,140 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | UNIVERSITY OF WASHINGTON | UWSC9138 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,585 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMC68614 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,615 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | WISTAR INSTITUTE | 35611-02-370 | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ - | \$ 442 |
| MILITARY MEDICAL RESEARCH AND DEVELOPMENT | 12.420 | | | \$ 12,221,299 | Research and Development | \$ 920,364,194 | \$ 1,111,881 | \$ 11,395,469 |
| MULTIFERROIC VECTOR MAGNETOMETER (MFVM) | 12.RD | LEIDOS, INC. | P010242159 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 74,909 |
| NEUROBEHAVIORAL EFFECTS OF BATTLEMIND VS. MINDFULNESS BASED MILITARY T | 12.RD | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ (103) |
| NON-INVASIVE MONITORING OF TRAUMATIC BRAIN INJURY PROGRESSION USING TH | 12.RD | UNIVERSITY OF ALABAMA AT BIRMINGHAM | N/A | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,968 |
| PAUSIT: PRIVACY PROTECTION AND AUTHORSHIP ATTRIBUTION USING STYLE-BASE | 12.RD | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ 306,944 | \$ 924,158 |
| PENN AEROSPACE CLUB: AEROSPACE PROPULSION OUTREACH PROGRAM | 12.RD | ARCTOS TECHNOLOGY SOLUTIONS, LLC | 212014.05.00.2016.00.22-C3 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,249 |
| RESEARCH AND TECHNOLOGY DEVELOPMENT | 12.910 | NEW YORK UNIVERSITY | F1400-03 | \$ 5,308,722 | Research and Development | \$ 920,364,194 | \$ - | \$ 188,035 |
| RESEARCH AND TECHNOLOGY DEVELOPMENT | 12.910 | YALE UNIVERSITY | CON-80003844 (GR117762) | \$ 5,308,722 | Research and Development | \$ 920,364,194 | \$ - | \$ 54,105 |
| RESEARCH AND TECHNOLOGY DEVELOPMENT | 12.910 | | | \$ 5,308,722 | Research and Development | \$ 920,364,194 | \$ 1,028,247 | \$ 3,755,384 |
| RESTORING MEMORY WITH TASK-INDEPENDENT SEMI-CHRONIC CLOSED-LOOP DIRECT | 12.RD | MEDICAL TECHNOLOGY ENTERPRISE CONSORTIUM (MTEC) | 2020-639 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 610,547 |
| ROBUST AUTONOMY IN UAVS ON A CONVERGENT DIGITAL-ANALOG FERROELECTRONIC | 12.RD | GEORGIA TECH RESEARCH INSTITUTE | AWD-003001-S4 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ (48,990) |
| SCUTTLE (SOCIAL CULTURAL UNDERSTANDING THROUGH LINGUISTIC EXPRESSION) | 12.RD | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,051,983 |
| SECURE HANDLING OF ISOLATED EXECUTABLES WITHOUT LEAKING (CLOSURE) | 12.RD | PERATOM LABS | PO-0108618 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ 47,527 | \$ 130,631 |
| SELF-RECONFIGURABLE MODULAR GROUND ROBOTS | 12.RD | TRITON SYSTEMS, INC | TSI-2749-21-2020599 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 137,255 |
| SOLUBLE RECEPTOR PROTEINS FOR SCREENING ASSAYS | 12.RD | SANDIA NATIONAL LABORATORY | 2474204 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,289 |
| SONICVIPER | 12.RD | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ (147) |
| STARKEPPER | 12.RD | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,106,167 |
| STTR: VECTORIZATION SOLUTIONS TO MAKE DECISIONS ABOUT OBJECTS AND AREA | 12.RD | VY CORPORATION | SUB TO FX215-TC501-0059 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,316 |
| SYSTEMIC GENERATIVE ENGINEERING | 12.RD | SIEMENS CORPORATE RESEARCH, INC. | 198-01 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 442,459 |
| TASK-AND-USER AWARE REPRESENTATION LEARNING FOR FINE GRAINED CROSSING | 12.RD | BROWN UNIVERSITY | 00001475 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 230,064 |
| THERMIONIC POWER GENERATION FOR INDIVIDUAL SOLDIER | 12.RD | SPARK THERMIONICS | SUB TO W91CRB-21-C-0032 | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,307 |
| TOP GATED 2D/ALSCN/SIC STRUCTURES FOR SURFACE ACOUSTIC WAVE AMPLIFIERS | 12.RD | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 434,532 |
| TRANSFORMING RESEARCH AND CLINICAL KNOWLEDGE IN TRAUMATIC BRAIN INJURY | 12.RD | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 11184sc | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,827 |
| UNCOVER: CROSS-LINGUAL QUESTION ANSWERING TO IDENTIFYING INFORMATION D | 12.RD | | | \$ 12,395,804 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,202 |
| UNIFORMED SERVICES UNIVERSITY MEDICAL RESEARCH PROJECTS | 12.750 | HENRY M. JACKSON FOUNDATION | 307226-1.00-64373 | \$ 123,603 | Research and Development | \$ 920,364,194 | \$ - | \$ 2 |
| UNIFORMED SERVICES UNIVERSITY MEDICAL RESEARCH PROJECTS | 12.750 | HENRY M. JACKSON FOUNDATION | 5757 | \$ 123,603 | Research and Development | \$ 920,364,194 | \$ - | \$ 123,601 |
| DEPARTMENT OF DEFENSE Total | | | | | | | \$ 10,552,899 | \$ 53,104,354 |
| DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT | | | | | | | | |
| COVID-19 - RESEARCH AND EVALUATIONS, DEMONSTRATIONS, AND DATA ANALYSIS AND UTILIZATION | 14.536 | | | \$ 21,237 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,237 |
| FY 2022 AND FY 2023 COMMUNITY COMPASS TECHNICAL ASSISTANCE AND CAPACIT | 14.RD | ABT ASSOCIATES INC. | 54376 | \$ 24,724 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,724 |
| OFFICE OF LEAD HAZARD CONTROL AND HEALTHY HOMES | 14.913 | | | \$ 79,957 | N/A | \$ - | \$ - | \$ 79,957 |
| DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Total | | | | | | | \$ - | \$ 125,918 |
| DEPARTMENT OF THE INTERIOR | | | | | | | | |
| COOPERATIVE RESEARCH AND TRAINING PROGRAMS & RESOURCES OF THE NATIONAL PARK SYSTEM | 15.945 | | | \$ 582,311 | Research and Development | \$ 920,364,194 | \$ - | \$ 582,311 |
| ROUTE 66 CORRIDOR PRESERVATION | 15.958 | | | \$ 3,970 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,970 |
| YOUTH ENGAGEMENT, EDUCATION, AND EMPLOYMENT PROGRAMS | 15.676 | | | \$ 117,663 | N/A | \$ - | \$ - | \$ 117,663 |
| DEPARTMENT OF THE INTERIOR Total | | | | | | | \$ - | \$ 703,944 |
| DEPARTMENT OF JUSTICE | | | | | | | | |
| CAPITAL CASE LITIGATION INITIATIVE | 16.746 | | | \$ 203,701 | Research and Development | \$ 920,364,194 | \$ - | \$ 203,701 |
| CRIME VICTIM ASSISTANCE/DISCRETIONARY GRANTS | 16.582 | | | \$ 130,588 | N/A | \$ - | \$ - | \$ 130,588 |
| CRIME VICTIM ASSISTANCE | 16.575 | Pennsylvania Commission on Crime & Delinquency | N/A | \$ 189,047 | N/A | \$ - | \$ - | \$ 189,047 |
| DOJ, ANTI-TRUST DIVISION (ATR) - INTERGOVERNMENTAL PERSONNEL ACT (IPA) | 16.114 | | | \$ 232,693 | N/A | \$ - | \$ - | \$ 232,693 |
| EDWARD BYRNE MEMORIAL JUSTICE ASSISTANCE GRANT PROGRAM | 16.738 | INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE | SUB TO 2017-VI-BX-K001 | \$ 685,078 | JAG PROGRAM Cluster | \$ 685,078 | \$ - | \$ 685,078 |
| EVALUATION OF THE POLICE ASSISTED DIVERSION PILOT IN PHILADELPHIA | 16.RD | CITY OF PHILADELPHIA | PAD PROGRAM | \$ 199,706 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,476 |
| NATIONAL INSTITUTE OF JUSTICE RESEARCH, EVALUATION, AND DEVELOPMENT PROJECT GRANTS | 16.560 | DREXEL UNIVERSITY | 950045 | \$ 388,972 | Research and Development | \$ 920,364,194 | \$ - | \$ 35,471 |
| NATIONAL INSTITUTE OF JUSTICE RESEARCH, EVALUATION, AND DEVELOPMENT PROJECT GRANTS | 16.560 | | | \$ 388,972 | Research and Development | \$ 920,364,194 | \$ 353,642 | \$ 353,501 |
| PROJECT SAFE NEIGHBORHOODS | 16.609 | CALIFORNIA PARTNERSHIP FOR SAFE COMMUNITIES | SUB TO 2018-GP-BX-4023 | \$ 474,148 | Research and Development | \$ 920,364,194 | \$ - | \$ 474,148 |
| UPHOLDING THE RULE OF LAW AND PREVENTING WRONGFUL CONVICTIONS TRAINING | 16.RD | | | \$ 199,706 | Research and Development | \$ 920,364,194 | \$ - | \$ 179,230 |
| VICTIMS OF CHILD PORNOGRAPHY & TRAFFICKING | 16.834 | National Children's Alliance | LANC-PA-DTVF23 | \$ 3,580 | N/A | \$ - | \$ - | \$ 3,580 |
| DEPARTMENT OF JUSTICE Total | | | | | | | \$ 353,642 | \$ 2,507,513 |
| DEPARTMENT OF STATE | | | | | | | | |
| INTERNATIONAL PROGRAMS TO COMBAT HUMAN TRAFFICKING | 19.019 | INNOVATIONS FOR POVERTY ACTION (IPA) | USDOS-20-10001-X2 | \$ 7,484 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,484 |
| INTERNATIONAL PROGRAMS TO SUPPORT DEMOCRACY, HUMAN RIGHTS AND LABOR | 19.345 | INTERNATIONAL ORGANIZATION FOR MIGRATION | IOM/CM-CP2019 | \$ 4,120 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,120 |
| INVESTING IN PEOPLE IN THE MIDDLE EAST AND NORTH AFRICA | 19.021 | | | \$ 772,551 | Research and Development | \$ 920,364,194 | \$ 23,018 | \$ 772,551 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
 SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
 Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures | |
|---|--------------------|--|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|---------------------|
| IPA FOR EUGEN DIMANT, ASSOCIATE FELLOW FOR THE OFFICE OF EVALUATION SC | 19.UJ15 | | | \$ 40,909 | N/A | \$ - | - | \$ 40,909 | |
| PUBLIC DIPLOMACY PROGRAMS | 19.040 | | | \$ 63,415 | N/A | \$ - | - | \$ 63,415 | |
| U.S. AMBASSADORS FUND FOR CULTURAL PRESERVATION | 19.025 | | | \$ 156,370 | N/A | \$ - | - | \$ 156,370 | |
| UPDATING MEASURES OF LOW-VALUE CARE IN MEDICARE | 19.RD | | | \$ 14,476 | Research and Development | \$ 920,364,194 | - | \$ 14,476 | |
| DEPARTMENT OF STATE Total | | | | | | | \$ | 23,018 | \$ 1,059,325 |
| DEPARTMENT OF TRANSPORTATION | | | | | | | | | |
| AIR TRANSPORTATION CENTERS OF EXCELLENCE | 20.109 | | | \$ 105,726 | Research and Development | \$ 920,364,194 | - | \$ 105,726 | |
| HIGHWAY TRAINING AND EDUCATION | 20.215 | | | \$ 36,109 | Research and Development | \$ 920,364,194 | - | \$ 36,109 | |
| NATIONAL SLEEP STUDY TECHNICAL SUPPORT | 20.RD | | | \$ 1,024,605 | Research and Development | \$ 920,364,194 | - | \$ 1,024,605 | |
| UNIVERSITY TRANSPORTATION CENTERS PROGRAM | 20.701 | CARNEGIE MELLON UNIVERSITY | 1080376-379208 | \$ 479,498 | Research and Development | \$ 920,364,194 | - | \$ 222,548 | |
| UNIVERSITY TRANSPORTATION CENTERS PROGRAM | 20.701 | UNIVERSITY OF TEXAS AT AUSTIN | UTA17-000185 | \$ 479,498 | Research and Development | \$ 920,364,194 | - | \$ 256,950 | |
| DEPARTMENT OF TRANSPORTATION Total | | | | | | | \$ | - | \$ 1,645,938 |
| DEPARTMENT OF TREASURY | | | | | | | | | |
| COVID-19 - CORONAVIRUS STATE AND LOCAL FISCAL RECOVERY FUNDS | 21.027 | Pennsylvania School-Based Health Alliance | FAINR SLFRP1746 | \$ 446,951 | N/A | \$ - | - | \$ 75,000 | |
| COVID-19 - CORONAVIRUS STATE AND LOCAL FISCAL RECOVERY FUNDS | 21.027 | PENNSYLVANIA COMMISSION ON CRIME AND DELINQUENCY | 2022-SF-VI-36833 | \$ 446,951 | N/A | \$ - | - | \$ 371,951 | |
| DEPARTMENT OF TREASURY Total | | | | | | | \$ | - | \$ 446,951 |
| LIBRARY OF CONGRESS | | | | | | | | | |
| USING PRIMARY SOURCES TO SUPPORT CIVICALLY ENGAGED ARGUMENT WRITING IN | 42.U08 | | | \$ 48,322 | N/A | \$ - | - | \$ 48,322 | |
| LIBRARY OF CONGRESS Total | | | | | | | \$ | - | \$ 48,322 |
| NATIONAL AERONAUTICS & SPACE ADMINISTRATION | | | | | | | | | |
| AERONAUTICS | 43.002 | | | \$ 5,854 | Research and Development | \$ 920,364,194 | - | \$ 5,854 | |
| COVID-19 - SCIENCE | 43.001 | | | \$ 881,061 | Research and Development | \$ 920,364,194 | - | \$ (24,861) | |
| EDUCATION | 43.008 | PENNSYLVANIA STATE UNIVERSITY | S001610-NASA | \$ 24,560 | Research and Development | \$ 920,364,194 | - | \$ 12,560 | |
| EDUCATION | 43.008 | PENNSYLVANIA STATE UNIVERSITY | S002820-NASA | \$ 24,560 | Research and Development | \$ 920,364,194 | - | \$ 12,000 | |
| EXPLORATION | 43.003 | BAYLOR COLLEGE OF MEDICINE | 7000001550 | \$ 1,223,847 | Research and Development | \$ 920,364,194 | - | \$ 134,966 | |
| EXPLORATION | 43.003 | MASSACHUSETTS GENERAL HOSPITAL | 236754 | \$ 1,223,847 | Research and Development | \$ 920,364,194 | - | \$ 16,796 | |
| EXPLORATION | 43.003 | | | \$ 1,223,847 | Research and Development | \$ 920,364,194 | 150,271 | \$ 1,072,085 | |
| FOAM OPTICS AND MECHANICS | 43.RD | | | \$ 37,247 | Research and Development | \$ 920,364,194 | - | \$ 8,931 | |
| NEED GUARANTEED-TIME OBSERVING (GTO) | 43.RD | | | \$ 37,247 | Research and Development | \$ 920,364,194 | - | \$ 28,316 | |
| SCIENCE | 43.001 | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | 097657-17658 | \$ 881,061 | Research and Development | \$ 920,364,194 | - | \$ 272,060 | |
| SCIENCE | 43.001 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-00003917 | \$ 881,061 | Research and Development | \$ 920,364,194 | - | \$ 116,763 | |
| SCIENCE | 43.001 | | | \$ 881,061 | Research and Development | \$ 920,364,194 | - | \$ 517,099 | |
| SPACE OPERATIONS | 43.007 | | | \$ 304,814 | Research and Development | \$ 920,364,194 | 67,332 | \$ 304,814 | |
| SPACE TECHNOLOGY | 43.012 | | | \$ 429,153 | Research and Development | \$ 920,364,194 | - | \$ 429,153 | |
| NATIONAL AERONAUTICS & SPACE ADMINISTRATION Total | | | | | | | \$ | 214,643 | \$ 2,906,536 |
| INSTITUTE OF MUSEUM AND LIBRARY SERVICES OR NATIONAL ENDOWMENT FOR THE ARTS OR NATIONAL ENDOWMENT FOR THE HUMANITIES | | | | | | | | | |
| MUSEUMS FOR AMERICA | 45.301 | | | \$ 147,884 | N/A | \$ - | - | \$ 147,884 | |
| NATIONAL LEADERSHIP GRANTS | 45.312 | | | \$ 39,481 | Research and Development | \$ 920,364,194 | - | \$ 39,481 | |
| PROMOTION OF THE ARTS, GRANTS TO ORGANIZATIONS AND INDIVIDUALS | 45.024 | HENRY M. JACKSON FOUNDATION | 5759 | \$ 336,766 | N/A | \$ - | - | \$ 92,306 | |
| PROMOTION OF THE ARTS, GRANTS TO ORGANIZATIONS AND INDIVIDUALS | 45.024 | | | \$ 336,766 | N/A | \$ - | - | \$ 244,460 | |
| PROMOTION OF THE ARTS, PARTNERSHIP AGREEMENTS | 45.025 | MID ATLANTIC ARTS FOUNDATION | 2023-2910 | \$ 23,100 | N/A | \$ - | - | \$ 8,400 | |
| PROMOTION OF THE ARTS, PARTNERSHIP AGREEMENTS | 45.025 | MID ATLANTIC ARTS FOUNDATION | 2023-2969 | \$ 23,100 | N/A | \$ - | - | \$ 8,400 | |
| PROMOTION OF THE ARTS, PARTNERSHIP AGREEMENTS | 45.025 | MID ATLANTIC ARTS FOUNDATION | 2023-3036 | \$ 23,100 | N/A | \$ - | - | \$ 6,300 | |
| PROMOTION OF THE HUMANITIES, OFFICE OF DIGITAL HUMANITIES | 45.169 | | | \$ 3,458 | N/A | \$ - | - | \$ 3,458 | |
| PROMOTION OF THE HUMANITIES, PUBLIC PROGRAMS | 45.164 | | | \$ 200,000 | N/A | \$ - | - | \$ 200,000 | |
| PROMOTION OF THE HUMANITIES, RESEARCH | 45.161 | UNIVERSITY OF FLORIDA | SUB00003713 | \$ 42,941 | Research and Development | \$ 920,364,194 | - | \$ 4,367 | |
| PROMOTION OF THE HUMANITIES, RESEARCH | 45.161 | | | \$ 42,941 | Research and Development | \$ 920,364,194 | - | \$ 38,574 | |
| INSTITUTE OF MUSEUM AND LIBRARY SERVICES OR NATIONAL ENDOWMENT FOR THE ARTS OR NATIONAL ENDOWMENT FOR THE HUMANITIES Total | | | | | | | \$ | - | \$ 793,630 |
| NATIONAL SCIENCE FOUNDATION | | | | | | | | | |
| BIOLOGICAL SCIENCES | 47.074 | BAYLOR UNIVERSITY | 1001318-01 | \$ 3,778,937 | Research and Development | \$ 920,364,194 | - | \$ 167,667 | |
| BIOLOGICAL SCIENCES | 47.074 | BOYCE THOMPSON INSTITUTE | 20.01 | \$ 3,778,937 | Research and Development | \$ 920,364,194 | - | \$ 173,220 | |
| BIOLOGICAL SCIENCES | 47.074 | PURDUE UNIVERSITY | 10001908-017 | \$ 3,778,937 | Research and Development | \$ 920,364,194 | - | \$ 241,991 | |
| BIOLOGICAL SCIENCES | 47.074 | UNIVERSITY CORPORATION, THE | A16-0018-S001 | \$ 3,778,937 | Research and Development | \$ 920,364,194 | - | \$ 21,965 | |
| BIOLOGICAL SCIENCES | 47.074 | | | \$ 3,778,937 | Research and Development | \$ 920,364,194 | 71,270 | \$ 2,945,232 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | CARNEGIE MELLON UNIVERSITY | 1123580-448452 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 10,639 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | COLUMBIA UNIVERSITY | 2(GG017134-01) | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 193,896 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | COMPUTING RESEARCH ASSOCIATION | CIF2020-UP-07 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 18,997 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | COMPUTING RESEARCH ASSOCIATION | CIF2020-UP-35 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 60,017 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | COMPUTING RESEARCH ASSOCIATION | CIF2020Year3-UP-35 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 50,358 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | PRINCETON UNIVERSITY | SUB0000480 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ (16) | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | UNIVERSITY OF CALIFORNIA, SAN DIEGO | KR 704614 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 414,456 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | UNIVERSITY OF CALIFORNIA, SANTA CRUZ | A22-0123-S002 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 1,268 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | UNIVERSITY OF MEMPHIS | 1640813 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ (9) | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-00004285 | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 89,274 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | | | \$ 150,622 | Research and Development | \$ 920,364,194 | - | \$ 150,622 | |
| COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | | | \$ 9,658,685 | Research and Development | \$ 920,364,194 | 163,910 | \$ 8,515,879 | |
| COVID-19 - BIOLOGICAL SCIENCES | 47.074 | | | \$ 3,778,937 | Research and Development | \$ 920,364,194 | - | \$ 228,862 | |
| COVID-19 - COMPUTER AND INFORMATION SCIENCE AND ENGINEERING | 47.070 | | | \$ 9,658,685 | Research and Development | \$ 920,364,194 | - | \$ 303,926 | |
| COVID-19 - EDUCATION AND HUMAN RESOURCES | 47.076 | MEEDAN INC | FACTCHAMP/2021/103 | \$ 7,734,179 | Research and Development | \$ 920,364,194 | - | \$ 130,458 | |
| COVID-19 - EDUCATION AND HUMAN RESOURCES | 47.076 | | | \$ 7,734,179 | Research and Development | \$ 920,364,194 | - | \$ 7 | |
| COVID-19 - ENGINEERING | 47.041 | | | \$ 18,866,444 | Research and Development | \$ 920,364,194 | 1,576,686 | \$ 5,130,514 | |
| COVID-19 - SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES | 47.075 | ARIZONA STATE UNIVERSITY | ASU800001004 | \$ 3,642,137 | Research and Development | \$ 920,364,194 | - | \$ 50,970 | |
| COVID-19 - SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES | 47.075 | | | \$ 3,642,137 | Research and Development | \$ 920,364,194 | 467 | \$ 64,701 | |
| EDUCATION AND HUMAN RESOURCES | 47.076 | DREXEL UNIVERSITY | 920085 | \$ 7,734,179 | Research and Development | \$ 920,364,194 | - | \$ 62,564 | |
| EDUCATION AND HUMAN RESOURCES | 47.076 | PURDUE UNIVERSITY | 10001863-009 | \$ 7,734,179 | Research and Development | \$ 920,364,194 | - | \$ 34,275 | |
| EDUCATION AND HUMAN RESOURCES | 47.076 | UNIVERSITY OF CALIFORNIA, IRVINE | 2022-1655 | \$ 7,734,179 | Research and Development | \$ 920,364,194 | - | \$ 98,486 | |
| EDUCATION AND HUMAN RESOURCES | 47.076 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5119693 | \$ 7,734,179 | Research and Development | \$ 920,364,194 | - | \$ 85,982 | |
| EDUCATION AND HUMAN RESOURCES | 47.076 | | | \$ 7,734,179 | Research and Development | \$ 920,364,194 | 88,414 | \$ 7,322,407 | |
| ENGINEERING | 47.041 | AMERICAN SOCIETY FOR ENGINEERING EDUCATION | 769-2068 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | - | \$ 129,324 | |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures | |
|--|--------------------|--|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|---------------|
| | | | | | | | | | |
| ENGINEERING | 47.041 | CARNEGIE MELLON UNIVERSITY | 1122380-424804 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 270,984 | |
| ENGINEERING | 47.041 | DREXEL UNIVERSITY | 920153 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 297,199 | |
| ENGINEERING | 47.041 | GEORGIA INSTITUTE OF TECHNOLOGY | R1375-G1 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,231 | |
| ENGINEERING | 47.041 | NAAMIRA BIOMEDICALS, LLC | 1 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,178 | |
| ENGINEERING | 47.041 | OHIO STATE UNIVERSITY | GR126338/SPC-100006409 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,815 | |
| ENGINEERING | 47.041 | ROCHESTER INSTITUTE OF TECHNOLOGY | 32684-02 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,719 | |
| ENGINEERING | 47.041 | UNIVERSITY OF CALIFORNIA, IRVINE | 2022-1835 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,544 | |
| ENGINEERING | 47.041 | UNIVERSITY OF HOUSTON | R-19-0095 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,459 | |
| ENGINEERING | 47.041 | UNIVERSITY OF MARYLAND | 104752-23822204 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 144,206 | |
| ENGINEERING | 47.041 | UNIVERSITY OF MICHIGAN | 3004604526 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,099 | |
| ENGINEERING | 47.041 | WEST CHESTER UNIVERSITY | 2021-2129183-01 | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ - | \$ 61,335 | |
| ENGINEERING | 47.041 | | | \$ 18,866,444 | Research and Development | \$ 920,364,194 | \$ 3,744,964 | \$ 12,751,837 | |
| GEOSCIENCES | 47.050 | RUTGERS UNIVERSITY | 2063 | \$ 556,137 | Research and Development | \$ 920,364,194 | \$ - | \$ 60,217 | |
| GEOSCIENCES | 47.050 | | | \$ 556,137 | Research and Development | \$ 920,364,194 | \$ - | \$ 495,920 | |
| HARNESSING EVOLUTION TO REVEAL THE MOLECULAR LOGIC OF KINETOCHORE WIRI INTEGRATIVE ACTIVITIES | 47.RD | WHITEHEAD INSTITUTE FOR BIOMEDICAL RESEARCH | Sub to NSF ADV ACCT | \$ 581,286 | Research and Development | \$ 920,364,194 | \$ - | \$ 243,711 | |
| IPA AGREEMENT - PROGRAM DIRECTOR IN THE ROBUST INTELLIGENCE PROGRAM | 47.RD | | | \$ 581,286 | Research and Development | \$ 920,364,194 | \$ 136,821 | \$ 169,926 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | PRINCETON UNIVERSITY | SUB0000032 | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 138,564 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | PRINCETON UNIVERSITY | SUB0000223 | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,300 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | TEXAS A&M UNIVERSITY | M2002925 | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 81,754 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | UNIVERSITY OF DELAWARE | S8081 | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 93,950 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | UNIVERSITY OF PUERTO RICO | DMR-1523463 | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 115,195 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | UNIVERSITY OF WASHINGTON | UWSC12986 | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 305,195 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-22-0351 | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 631,795 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | | | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,453 | |
| MATHEMATICAL AND PHYSICAL SCIENCES | 47.049 | | | \$ 13,993,227 | Research and Development | \$ 920,364,194 | \$ 685,085 | \$ 12,912,585 | |
| MUSTANG 2 OPERATIONS ON THE GREEN BANK TELESCOPE | 47.RD | NATIONAL RADIO ASTRONOMY OBSERVATORY | 372870 | \$ 581,286 | Research and Development | \$ 920,364,194 | \$ - | \$ 49,610 | |
| OFFICE OF INTERNATIONAL SCIENCE AND ENGINEERING | 47.079 | | | \$ 233,712 | Research and Development | \$ 920,364,194 | \$ - | \$ 233,712 | |
| PFI-RP: COMPLIANT MANIPULATION OF SMALL, DELICATE, AND CURVED OBJECTS | 47.084 | SYRACUSE UNIV | 32628-06220-S01 | \$ 101,573 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,593 | |
| POLAR PROGRAMS | 47.078 | | | \$ 53,910 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,910 | |
| SBIR PHASE II: SINGLE WEARABLE PATCH FOR COST-EFFECTIVE, RELIABLE, AND SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES | 47.RD | HUXLEY MEDICAL, INC. | SUB TO 2136470 | \$ 581,286 | Research and Development | \$ 920,364,194 | \$ - | \$ 149,401 | |
| SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES | 47.075 | PRINCETON UNIVERSITY | SUB0000645 | \$ 3,642,137 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,577 | |
| SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES | 47.075 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-22-0133 | \$ 3,642,137 | Research and Development | \$ 920,364,194 | \$ - | \$ 137,708 | |
| SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES | 47.075 | | | \$ 3,642,137 | Research and Development | \$ 920,364,194 | \$ 140,168 | \$ 3,361,181 | |
| TRANSFORMING EDUCATIONAL TECHNOLOGY THROUGH CONVERGENCE | 47.084 | | | \$ 101,573 | Research and Development | \$ 920,364,194 | \$ - | \$ 89,980 | |
| NATIONAL SCIENCE FOUNDATION Total | | | | | | | | \$ 6,607,785 | \$ 59,520,775 |
| DEPARTMENT OF VETERANS AFFAIRS | | | | | | | | | |
| ACCELERATED AGING AS A CAUSE OF CHRONIC LUNG ALLOGRAFT DYSFUNCTION | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,007 | |
| BEERS - VA MERIT AWARD | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 93,439 | |
| BIOACTIVE INJECTABLE IMPLANTS FOR FUNCTIONAL INTERVERTEBRAL DISC REGE | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 192,132 | |
| BROWNLILY - SAVERS: SUICIDE PREVENTION SERVICES INTEGRATION IN COACH | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,817 | |
| CARTILAGE REPAIR STRATEGIES TO ALLEVIATE ARTHRITIS PAIN (CARE AP): TAR | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,020 | |
| CHRONIC FOCAL AND DIFFUSE TRAUMATIC BRAIN INJURY: MECHANISMS UNDERLYIN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 122,345 | |
| COGNITIVE BEHAVIORAL THERAPY (CBT-I) AUGMENTATION OF TOPIRAMATE IN PRO | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,897 | |
| COGNITIVE BEHAVIORAL THERAPY (CBT-I) AUGMENTATION OF TOPIRAMATE IN PRO | 64.U09 | | | \$ 9,443 | N/A | \$ - | \$ - | \$ 9,443 | |
| COVID-19 - BIJAL PATEL FY23 COVID IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,778 | |
| COVID-19 - CALEIGH DOHERTY CSP VA IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 69,302 | |
| COVID-19 - COVID-19: ELUCIDATING THE ROLE OF THE NASAL EPITHELIUM IN SARS-COV-2 I | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,336 | |
| COVID-19 - COVID-19: UNDERSTANDING THE ROLE OF CORONA VIRUS INDUCED DISRUPTION OF | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 97,787 | |
| COVID-19 - FY23 IPA LEA WILLIAMS CSP | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,539 | |
| COVID-19 - IPA FOR MARY VALIGA - CSP 2028 | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,261 | |
| COVID-19 - JAYANA RICHARDSON COVID IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,313 | |
| COVID-19 - LEA WILLIAMS COVID-19 IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,879 | |
| COVID-19 - TAMMY XU CSP #2028 IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,021 | |
| COVID-19 - TAMMY XU FY22 COVID IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,306 | |
| COVID-19 - VA IPA AGREEMENT FOR MARY VALIGA (DR. ISAACS) 3/6/23-9/30/23 | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,508 | |
| COVID-19 - VA IPA: KRISTIN LINN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,099 | |
| COVID-19 - VA IPA: TAMAR KLAIMAN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,850 | |
| DEVELOPING PERSONALIZED MEDICINE STRATEGIES TO INCREASE PHYSICAL ACTIV | 64.RD | PHILADELPHIA RESEARCH AND EDUCATION FOUNDATION | IPA AGREEMENT | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,775 | |
| DEVELOPMENT OF A MOLECULAR IMAGING SYSTEM FOR SURGICAL SPECIMEN IMAGIN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,951 | |
| DEVELOPMENT OF A UNIQUE IN VITRO TEST BED MODEL TO EXPLORE MECHANISMS | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ (2) | |
| EVALUATE THE ROLE OF CGAS IN THE TYPE I INTERFERON RESPONSE ELICITED B | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,000 | |
| EVIDENCE BASED PSYCHOTHERAPY PROGRAM | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,006 | |
| EXTRACELLULAR VESICLES AS A NOVEL MEDIATOR FOR ULTRAVIOLET-B LIGHT IND | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 74,433 | |
| FY23 BIJAL PATEL IPA FOR BAKER VA MERIT | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,016 | |
| GROUP ("PROJECT LIFE FORCE") VS. INDIVIDUAL SUICIDE SAFETY PLANNING RC | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,817 | |
| IMMUNOLOGIC MECHANISMS FOR HETEROGENEITY OF CUTANEOUS LUPUS ERYTHEMATO | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 56,816 | |
| IMPACT OF OVERLOAD AND OVERUSE FOLLOWING SUBSCAPULARIS TEARS: MECHANIS | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 162,662 | |
| IPA - HOLLY BARILLA TO DELIVER CBT FOR INSOMNIA IN PATIENTS WITH SERIO | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,033 | |
| IPA - KEITH BREDEMEIER | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,251 | |
| IPA - RICHARD CRIST (GAMMA) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,572 | |
| IPA - STATINS AND CIRRHOSIS: REDUCING EVENTS OF DECOMPENSATION (SACRED | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,193 | |
| IPA # 2 CHANG R&D (M. VUKJOVIC) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 48,695 | |
| IPA # 4. MYPICAL COVID VUKJOVIC | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,384 | |
| IPA #1. CHANG-MVP (M. VUKJOVIC)NO RESTRICTS NON-U.S. ENTITY PARTICIPAT | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 92,823 | |
| IPA AGREEMENT FOR MELISSA NASCHEK | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,983 | |
| IPA AGREEMENT FOR SOFIA LIZZA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,954 | |
| IPA AGREEMENT FOR XAVIER ARTHUR | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,908 | |
| IPA ANITA AGARWAL VAST-D-II STUDY | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 57,474 | |
| IPA FOR DR. VOIGHT PARTICIPATION IN STUDY "GENETICS OF CARDIOMETABOLIC | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 12,154 | |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| IPA FOR ELIZABETH KRIZMAN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,285 |
| IPA FOR K. LINN AND J. YAN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,600 |
| IPA FOR KRISTIN LINN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,379 |
| IPA FOR MICHAEL PERLIS - COGNITIVE BEHAVIORAL THERAPY (CBT-I) AUGMENTA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,411 |
| IPA FOR MAYLEI NUNEZ CRUZ ON "COGNITIVE BEHAVIORAL THERAPY FOR INSOMNI | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 44,559 |
| IPA FOR SAEWHAN PARK - RACIAL BIAS IN A VA ALGORITHM FOR HIGH-RISK VET | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,592 |
| IPA FOR SAMUEL KLUNE CSP 2016 STUDY | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,324 |
| IPA FOR ZEAL JINWALA: ANALYSIS OF DATA FROM THE MILLION VETERAN PROGRA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 23,628 |
| IPA KEMBER-MVP004 | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,056 |
| IPA LYNCH MIRECC | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,198 |
| IPA: HUMMY SONG (IMPROVING POST-ACUTE CARE VALUE FOR VETERANS - I01HX0 | 64.U19 | | | \$ 34,558 | N/A | \$ - | \$ - | \$ 34,558 |
| JULIANA BONILLA FY23 CSP IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,485 |
| JULIANNA BONILLA IPA FOR VA MERIT FY23 | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,786 |
| KNEE JOINT RESURFACING WITH ANATOMIC TISSUE ENGINEERED OSTEOCHONDRAL I | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 139,739 |
| LIVING ELECTRODES FOR AUDITORY REHABILITATION | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,294 |
| LYNCH PRIME IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,113 |
| MECHANO-ACTIVE ANNULAR REPAIR DEVICE FOR TREATING DISC HERNIATION | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,428 |
| NEURAL PROCESSING OF MULTISENSORY SPEECH AT MILLISECOND AND MILLIMETER | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,866 |
| NEUROMODULATION AS A THERAPY FOR PTSD FOLLOWING CHRONIC TBI | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 85,116 |
| OPTIMIZATION OF ENGINEERED ENDOPLATES TO IMPROVE IN VIVO INTEGRATION OF | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,045 |
| PATHOGENESIS OF CHRONIC RHINOSINUSITIS | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,932 |
| PATHOLOGIC SIGNALING PATHWAYS IN AML CELLS | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,452 |
| PHENOTYPIC AND GENOMIC ARCHITECTURE OF CARDIOVASCULAR DISEASE SUBTYPES | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 71,428 |
| PRECISION CARDIO-METABOLIC PHENOTYPING FOR GENETIC DISCOVERY AND RISK | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 178,226 |
| PREFERENCES ELICITED AND RESPECTED FOR SERIOUSLY ILL VETERANS THROUGH | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 128,264 |
| PROBLEM SOLVING THERAPY PROGRAM IPA: GREGORY BROWN AND KELLY GREEN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 78,346 |
| QUERI SAGE IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,654 |
| SAMUEL KLUNE IPA - DOES ADDING A TAILORED COGNITIVE BEHAVIORAL THERAPY | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,134 |
| SDR: GENOMIC ANALYSIS OF BLAST TUBE INDUCED TBI IN MICE | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 295,898 |
| THE ROLE OF DISC NUTRITION IN THE ETIOLOGY AND CLINICAL TREATMENT OF D | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 75,867 |
| THE ROLE OF FUNCTIONAL IRON DEFICIENCY IN SYSTEMIC COMPLICATIONS OF CK | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 59,235 |
| TISSUE ENGINEERED NIGROSTRIATAL PATHWAY AS A TESTBED FOR EVALUATING AX | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 107,027 |
| TISSUE ENGINEERED TOTAL DISC REPLACEMENT IN A LARGE ANIMAL MODEL | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 173,417 |
| TISSUE-ENGINEERED CONSTRUCTS FOR TREATMENT OF INTERVERTEBRAL DISC DEGE | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ (29,442) |
| TRANSLATIONAL MODELING OF BRAIN INJURY REHABILITATION TO MAXIMIZE RECO | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,845 |
| TRANSPLANTABLE MICRO-TISSUE ENGINEERED NEURAL NETWORKS TO RESTORE THE | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 100,807 |
| TRAUMATIC AND TREATABLE VASCULAR PATHOLOGY IN THE OUTCOME OF TBI | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 51,273 |
| VA IPA AGREEMENT FOR ALEX BURDZY | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,194 |
| VA IPA AGREEMENT FOR MARY VALIGA (JHALA) 03/06/2023-09/30/2023 | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,508 |
| VA IPA AGREEMENT FOR SOFIA LIZZA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 62,344 |
| VA IPA BAOFENG HU & VU NGUYEN - VA MERIT | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 117,714 |
| VA IPA FOR DANIEL TRAUM | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,270 |
| VA IPA FOR KEVIN LYNCH | 64.U07 | | | \$ 4,636 | N/A | \$ - | \$ - | \$ 4,636 |
| VA IPA FOR KEVIN LYNCH | 64.U17 | | | \$ 16,232 | N/A | \$ - | \$ - | \$ 16,232 |
| VA IPA: AILEEN OON | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,526 |
| VA IPA: ANKITHA RAO (PCCHW-FFY 2022) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,211 |
| VA IPA: ANTHONY DAVIS (PCCHW-FFY 2022) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 96,435 |
| VA IPA: DENERALE JONES (PCCHW-FFY 2022) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,708 |
| VA IPA: FRANYA HUTCHINS-PATIENT ALIGNED CARE TEAM (PACT) MOU | 64.U16 | | | \$ 53,042 | N/A | \$ - | \$ - | \$ 53,042 |
| VA IPA: GENEVIEVE KANTER (PROJECT NUMBER: 1I01HX003345-01A2) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,483 |
| VA IPA: JINGYI WU (CARDIOVASCULAR CARE AND OUTCOMES FOR VETERANS EXPR | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,850 |
| VA IPA: JINGYI WU (PROJECT NUMBER: 1I01HX003345-01A2) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 63,212 |
| VA IPA: JINGYI WU (RACIAL AND ETHNIC DIFFERENCES IN PRESENTATION AND Q | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ (9,305) |
| VA IPA: LAURAELEN ASHCRAFT | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 100,638 |
| VA IPA: MOLLY KNOWLES (PCCHW-FFY 2022) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,599 |
| VA IPA: PHOEBE WHITESIDE (VA QUERI GRANT) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,838 |
| VA IPA: RANDY HASTINGS (PCCHW-FFY 2022) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 96,434 |
| VA IPA: RAVISHANKAR JAYADEVARA (VISN PROJECT) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,497 |
| VA IPA: REBECCA HUBBARD (VISN PROJECT) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,470 |
| VA IPA: RUCHA KANDLUR (PCCHW-FFY 2022) | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,549 |
| VA IPA-ANEZZA AGHA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 83,014 |
| VA MERIT - STELTZ IPA | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 35,908 |
| VA MERIT AWARD: IMMUNE AND GENETIC CONTROLS OF TISSUE REGENERATION IN | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 178,374 |
| VA/IPA AGREEMENTS FOR MARY VALIGA, JAMES KEITH AND XIAOWANG QU | 64.U06 | | | \$ 9,754 | N/A | \$ - | \$ - | \$ 9,754 |
| YEAR 1 IPAS FOR MAUCK/BURDICK VA SPIRE PROJECT: "HYDROGEL DELIVERY OF | 64.RD | | | \$ 4,912,215 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,793 |
| DEPARTMENT OF VETERANS AFFAIRS Total | | | | | | | \$ - | \$ 5,039,880 |
| ENVIRONMENTAL PROTECTION AGENCY | | | | | | | | |
| ENVIRONMENTAL FINANCE CENTER GRANTS | 66.203 | UNIVERSITY OF MARYLAND | 108979-Q3641201 | \$ 5,520 | N/A | \$ - | \$ - | \$ 5,520 |
| OFFICE OF RESEARCH AND DEVELOPMENT CONSOLIDATED RESEARCH/TRAINING/FELLOWSHIPS | 66.511 | VIRGINIA POLYTECHNIC INSTITUTE & STATE UNIVERSITY | 451533-19314 | \$ 61,440 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,950 |
| OFFICE OF RESEARCH AND DEVELOPMENT CONSOLIDATED RESEARCH/TRAINING/FELLOWSHIPS | 66.511 | WATER RESEARCH FOUNDATION | 5200 | \$ 61,440 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,490 |
| ENVIRONMENTAL PROTECTION AGENCY Total | | | | | | | \$ - | \$ 66,960 |
| DEPARTMENT OF ENERGY | | | | | | | | |
| ADVANCED RESEARCH PROJECTS AGENCY - ENERGY | 81.135 | COLORADO STATE UNIVERSITY | G-85115-02 | \$ 436,445 | Research and Development | \$ 920,364,194 | \$ - | \$ (14,865) |
| ADVANCED RESEARCH PROJECTS AGENCY - ENERGY | 81.135 | COMMUNITY ENERGY VENTURES | SUB TO DE-AR0001237 | \$ 436,445 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,288 |
| ADVANCED RESEARCH PROJECTS AGENCY - ENERGY | 81.135 | | | \$ 436,445 | Research and Development | \$ 920,364,194 | \$ - | \$ 398,022 |
| ADVANCEMENT OF BULK ACOUSTIC WAVE DEVICES USING STRATEGICALLY POLED AC | 81.RD | SANDIA NATIONAL LABORATORY | 2424695 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,452 |
| ATOMS-TO-SYSTEMS CO-DESIGN: TRANSFORMING DATA FLOW TO ACCELERATE SCIEN | 81.RD | STANFORD UNIVERSITY | 223125 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | \$ 74,108 |
| CENTER FOR 3D FERROELECTRIC MICROELECTRONICS | 81.RD | PENNSYLVANIA STATE UNIVERSITY | 5001327-USDOE | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | \$ 146,846 |
| CHARACTERIZATION OF NANOCRYSTALLINE DIAMOND CAPSULES | 81.RD | LAWRENCE LIVERMORE NATIONAL LABORATORY | B656824 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,730 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|---|---|-----------------------|----------------------------------|----------------|----------------------------|-----------------------|
| CONSERVATION RESEARCH AND DEVELOPMENT | 81.086 | PIXELLIGHT TECHNOLOGIES | SUB TO DE-EE0009120 | \$ 202,311 | Research and Development | \$ 920,364,194 | \$ - | (8,883) |
| CONSERVATION RESEARCH AND DEVELOPMENT | 81.086 | PIXELLIGHT TECHNOLOGIES | SUB TO DE-EE0010211.0000 | \$ 202,311 | Research and Development | \$ 920,364,194 | \$ - | 98,882 |
| CONSERVATION RESEARCH AND DEVELOPMENT | 81.086 | TEXAS A&M UNIVERSITY | M2300700 | \$ 202,311 | Research and Development | \$ 920,364,194 | \$ - | 112,312 |
| DATA-DRIVEN FLUID MECHANICS: LEARNING RHEOLOGY FROM FLOW VISUALIZATION | 81.RD | SANDIA NATIONAL LABORATORY | POH 2464339 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 13,642 |
| DEEP UNDERGROUND NEUTRINO EXPERIMENT (DUNE) | 81.RD | | | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 169,813 |
| DESIGN OF A TARGET AND DICHOICRON FOR PHOTON SORTING AT CHESS | 81.RD | | | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 19,349 |
| EOS DETECTOR | 81.RD | | | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 135,301 |
| FUTURE RELEVANCE OF PROTON AND FLASH RADIOTHERAPY TO THE ORS MISSION | 81.RD | LAWRENCE LIVERMORE NATIONAL LABORATORY | B655304 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 25,032 |
| HIGH PERFORMANCE ELECTROMECHANICAL FILTERS REALIZED IN HIGHLY DOPED AL | 81.RD | SANDIA NATIONAL LABORATORY | 2093801 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 26,119 |
| HYBRID QUANTUM/CLASSICAL ALGORITHMS FOR PHOTOCHEMISTRY AND NONADIABATI | 81.RD | STANFORD LINEAR ACCELERATOR CENTER | N/A | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 7,132 |
| ITK DICING | 81.RD | | | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 59,296 |
| ITK STRIPS ASSEMBLY AND TESTING | 81.RD | | | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | (693) |
| MULTI-SOURCE LEARNING-ACCELERATED DESIGN OF HIGH-EFFICIENCY MULTI-STAG | 81.RD | UNITED TECHNOLOGIES RESEARCH CENTER | 1256545 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 92,902 |
| NON-PROLIFERATION ANTI-NEUTRINO RESEARCH | 81.RD | LAWRENCE LIVERMORE NATIONAL LABORATORY | B651369 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ 15,873 | 59,136 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | CORNELL UNIVERSITY | 85989-11289 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 192,839 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | FLORIDA STATE UNIVERSITY | R01865 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | (5,180) |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | JOHNS HOPKINS UNIVERSITY | 2004571414 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 70,959 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | RADIATION MONITORING DEVICES, INC. | C22-03 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 70,613 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | STONY BROOK | 63761/1108376/2 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 87,572 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | STONY BROOK | 86736/1158349/2 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 66,068 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | UNIVERSITY OF CALIFORNIA, BERKELEY | 00010484 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 35,482 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | UNIVERSITY OF DELAWARE | 58370 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 137,885 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5181794 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 886,335 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | UNIVERSITY OF TEXAS AT ARLINGTON | 2019GC4293 | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ - | 104,587 |
| OFFICE OF SCIENCE FINANCIAL ASSISTANCE PROGRAM | 81.049 | | | \$ 13,108,975 | Research and Development | \$ 920,364,194 | \$ 1,878,106 | 11,361,815 |
| PIPELINE INFRASTRUCTURE OPERATIONS PERSONNEL EFFORT FOR THE LSST DARK | 81.RD | STANFORD LINEAR ACCELERATOR CENTER | SUB TO DE-AC02-76SF00515 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 58,197 |
| REMOVABLE ADHESIVES | 81.RD | SANDIA NATIONAL LABORATORY | 2429549 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 2,054 |
| RESEARCH FOR ATLAS EXPERIMENT | 81.RD | | | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 303,711 |
| RESEARCH FOR ATLAS EXPERIMENT - TRT SUBSYSTEM | 81.RD | | | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 92,318 |
| SHAPE CHANGING OF RESPONSIVE ELASTOMER STRUCTURES (SCORES) | 81.RD | LAWRENCE LIVERMORE NATIONAL LABORATORY | B650723 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 40,889 |
| TAILORING PHOTOPHYSICAL ENERGY TRANSFER FOR SELECTIVE SEPARATIONS OF C | 81.RD | NATIONAL RENEWABLE ENERGY LABORATORY | SUB-2021-10494 | \$ 1,535,106 | Research and Development | \$ 920,364,194 | \$ - | 161,772 |
| DEPARTMENT OF ENERGY Total | | | | | | | \$ 1,893,979 | \$ 15,282,837 |
| DEPARTMENT OF EDUCATION | | | | | | | | |
| COVID-19 - EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | TEACHERS COLLEGE - COLUMBIA UNIVERSITY | 511152 | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ - | 75,080 |
| EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | AMERICAN INSTITUTE FOR RESEARCH | 0440200001 | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ - | 817 |
| EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 20093819-RSUB | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ - | 28,534 |
| EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3272530622 | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ - | 40,250 |
| EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | FLORIDA STATE UNIVERSITY | R011963 | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ - | 55,748 |
| EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | NORTH CAROLINA STATE UNIVERSITY | 2022-0714-02 | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ - | 102,513 |
| EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | UNIVERSITY OF CALIFORNIA, DAVIS | A22-0102-5003 | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ - | 33,491 |
| EDUCATION RESEARCH, DEVELOPMENT AND DISSEMINATION | 84.305 | | | \$ 2,624,863 | Research and Development | \$ 920,364,194 | \$ 352,529 | 2,238,430 |
| FEDERAL DIRECT LOANS | 84.268 | | | \$ 215,478,255 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | 215,478,255 |
| FEDERAL WORK-STUDY PROGRAM | 84.033 | | | \$ 3,346,306 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | 3,346,306 |
| NATIONAL RESOURCE CENTERS PROGRAM FOR FOREIGN LANGUAGE AND AREA STUDIES OR FOREIGN LANGUAGE AND | 84.015 | | | \$ 1,098,667 | N/A | \$ - | \$ 17,498 | 1,098,667 |
| INTERNATIONAL STUDIES PROGRAM AND FOREIGN LANGUAGE AND AREA STUDIES FELLOWSHIP PROGRAM | 84.022 | | | \$ 57,336 | Research and Development | \$ 920,364,194 | \$ - | 57,336 |
| OVERSEAS PROGRAMS - DOCTORAL DISSERTATION RESEARCH ABROAD | 84.021 | | | \$ 44,031 | N/A | \$ - | \$ - | 44,031 |
| OVERSEAS PROGRAMS - GROUP PROJECTS ABROAD | 84.324 | | | \$ 43,113 | Research and Development | \$ 920,364,194 | \$ 20,916 | 43,113 |
| RESEARCH IN SPECIAL EDUCATION | 84.184 | | | \$ 82,443 | Research and Development | \$ 920,364,194 | \$ - | 82,443 |
| SAFE AND DRUG-FREE SCHOOLS AND COMMUNITIES NATIONAL PROGRAMS | 84.027 | SCHOOL DISTRICT OF PHILADELPHIA | 2290/F20 | \$ 446,715 | SPECIAL EDUCATION CLUSTER (IDEA) | \$ 446,715 | \$ - | 446,715 |
| SPECIAL EDUCATION GRANTS TO STATES | 84.027 | SCHOOL DISTRICT OF PHILADELPHIA | 2335/F20 | \$ 242,911 | | \$ 1,714,618 | \$ - | 242,911 |
| TRIO STUDENT SUPPORT SERVICES | 84.044 | | | \$ 302,473 | TRIO Cluster | \$ 1,714,618 | \$ - | 302,473 |
| TRIO TALENT SEARCH | 84.047 | | | \$ 1,169,234 | TRIO Cluster | \$ 1,714,618 | \$ - | 1,169,234 |
| TRIO UPWARD BOUND | 84.047 | | | \$ 656,063 | N/A | \$ - | \$ - | 656,063 |
| TWENTY-FIRST CENTURY COMMUNITY LEARNING CENTERS | 84.287 | PENNSYLVANIA DEPARTMENT OF EDUCATION | FC4100053524 | \$ 656,063 | N/A | \$ - | \$ - | 310,292 |
| TWENTY-FIRST CENTURY COMMUNITY LEARNING CENTERS | 84.287 | PENNSYLVANIA DEPARTMENT OF EDUCATION | SUB TO 5287C170038 | \$ 656,063 | N/A | \$ - | \$ - | 345,771 |
| FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS | 84.007 | | | \$ 3,121,500 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | 3,121,500 |
| TEACHER EDUCATION ASSISTANCE FOR COLLEGE AND HIGHER EDUCATION GRANTS (TEACH GRANTS) | 84.379 | | | \$ 7,544 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | 7,544 |
| FEDERAL PELL GRANT PROGRAM | 84.063 | | | \$ 10,314,930 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | 10,314,930 |
| PERKINS LOAN OUTSTANDING LOANS ISSUED AS JULY 1, 2022 | 84.038 | | | \$ 16,573,964 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | 16,573,964 |
| DEPARTMENT OF EDUCATION Total | | | | | | | \$ 390,943 | \$ 255,610,348 |
| DEPARTMENT OF HEALTH AND HUMAN SERVICES | | | | | | | | |
| 21ST CENTURY CURES ACT - BEAU BIDEN CANCER MOONSHOT | 93.353 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201460819-XX | \$ 8,399,916 | Research and Development | \$ 920,364,194 | \$ - | 173,333 |
| 21ST CENTURY CURES ACT - BEAU BIDEN CANCER MOONSHOT | 93.353 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201460819-XX / PO 200228898-RSUB | \$ 8,399,916 | Research and Development | \$ 920,364,194 | \$ - | 250,521 |
| 21ST CENTURY CURES ACT - BEAU BIDEN CANCER MOONSHOT | 93.353 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | sub to 1U01CA232563-01 | \$ 8,399,916 | Research and Development | \$ 920,364,194 | \$ - | 260,977 |
| 21ST CENTURY CURES ACT - BEAU BIDEN CANCER MOONSHOT | 93.353 | JOHNS HOPKINS UNIVERSITY | 2004621711 | \$ 8,399,916 | Research and Development | \$ 920,364,194 | \$ - | 23,195 |
| 21ST CENTURY CURES ACT - BEAU BIDEN CANCER MOONSHOT | 93.353 | MORRIS ANIMAL FOUNDATION | D17CA-501 | \$ 8,399,916 | Research and Development | \$ 920,364,194 | \$ - | 14,926 |
| 21ST CENTURY CURES ACT - BEAU BIDEN CANCER MOONSHOT | 93.353 | WISTAR INSTITUTE | 25451-05-314; Xu | \$ 8,399,916 | Research and Development | \$ 920,364,194 | \$ - | 47,707 |
| 21ST CENTURY CURES ACT - BEAU BIDEN CANCER MOONSHOT | 93.353 | | | \$ 8,399,916 | Research and Development | \$ 920,364,194 | \$ 951,750 | 7,629,257 |
| A LATERAL FLOW ASSAY FOR RAPID SALIVA FENTANYL DETECTION (EFENTANYL) | 93.RD | INSTANTSON, INC. | SUB TO RA4D0055415 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | 60,234 |
| A RAPID MICROFLUIDIC DIAGNOSTIC ASSAY FOR THE MEASUREMENT OF DIRECT OR | 93.RD | FLOBIQ LLC | SUB TO R44HL14980 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | 56,142 |
| A SCALABLE, PATIENT-CENTERED APPROACH FOR "RIGHT-SIZING" OPIOID PRESCR | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | 316,512 |
| ACF DATA GOVERNANCE CONSULTING AND SUPPORT EXTENSION CONTRACT | 93.RD | SRI INTERNATIONAL | PO61444 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | 11,325 |
| ACTIVITIES TO SUPPORT STATE, TRIBAL, LOCAL AND TERRITORIAL (STLT) HEALTH DEPARTMENT RESPONSE TO PUBLIC | 93.391 | Pennsylvania Department of Health | SAP# A100091089 | \$ 77,754 | N/A | \$ - | \$ - | 77,754 |
| HEALTH OR HEALTHCARE CRISES | 93.RD | GEORGE WASHINGTON UNIVERSITY | 21200 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | (12,257) |
| ACTIVITY IN WOMEN AT RISK FOR EARLY DELIVERY (AWARE): AN ANCILLARY STU | 93.088 | COMMUNITY BEHAVIORAL HEALTH | HHS-Mother-SHIP-01 | \$ 111,297 | Research and Development | \$ 920,364,194 | \$ - | 111,297 |
| ADVANCING SYSTEM IMPROVEMENTS FOR KEY ISSUES IN WOMEN'S HEALTH | 93.527 | City of Philadelphia (Dept Public Health) | 2320014-00 | \$ 144,686 | HEALTH CENTER PROGRAM CLUSTER | \$ 153,673 | \$ - | 144,686 |
| AFFORDABLE CARE ACT (ACA) GRANTS FOR NEW AND EXPANDED SERVICES UNDER THE HEALTH CENTER PROGRAM | 93.505 | United Way of Lancaster County | SAP# A100070241 | \$ 1,682,021 | N/A | \$ - | \$ - | 1,682,021 |
| AFFORDABLE CARE ACT (ACA) MATERNAL, INFANT, AND EARLY CHILDHOOD HOME VISITING PROGRAM | 93.866 | BANNER HEALTH | 0435-02-71562 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | 95,802 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| | Federal ALN | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---------------------------------------|-------------|--|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| Federal Awarding Agency/Program Title | Number | | | | | | | |
| AGING RESEARCH | 93.866 | BANNER HEALTH | 0435-06-08001 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ 17,330 | \$ 142,535 |
| AGING RESEARCH | 93.866 | BANNER HEALTH | 0435-06-102819 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 171,022 |
| AGING RESEARCH | 93.866 | BANNER HEALTH | SUB TO R01AG069453 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 23,032 |
| AGING RESEARCH | 93.866 | BETH ISRAEL DEACONESS MEDICAL CENTER | 01063347 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,811 |
| AGING RESEARCH | 93.866 | BOSTON MEDICAL CENTER | 7653 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,647 |
| AGING RESEARCH | 93.866 | BOSTON UNIVERSITY | 4500003108 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 172,855 |
| AGING RESEARCH | 93.866 | BOSTON UNIVERSITY | 4500003187 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 63,678 |
| AGING RESEARCH | 93.866 | BOSTON UNIVERSITY | 4500003658 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,270 |
| AGING RESEARCH | 93.866 | BOSTON UNIVERSITY | 4500003659 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 63,599 |
| AGING RESEARCH | 93.866 | BOSTON UNIVERSITY | 4500003924 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,740 |
| AGING RESEARCH | 93.866 | BRIGHAM AND WOMEN'S HOSPITAL | 115388 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,479 |
| AGING RESEARCH | 93.866 | BRIGHAM AND WOMEN'S HOSPITAL | 121337 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 77,585 |
| AGING RESEARCH | 93.866 | BROWN UNIVERSITY | 00001361 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 272,104 |
| AGING RESEARCH | 93.866 | BROWN UNIVERSITY | 00001384 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,739 |
| AGING RESEARCH | 93.866 | BROWN UNIVERSITY | 00001589 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,135 |
| AGING RESEARCH | 93.866 | BROWN UNIVERSITY | 00002274 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,476 |
| AGING RESEARCH | 93.866 | CASE WESTERN RESERVE UNIVERSITY | RES514120 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 173,949 |
| AGING RESEARCH | 93.866 | CASE WESTERN RESERVE UNIVERSITY | RES514121 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 125,987 |
| AGING RESEARCH | 93.866 | CASE WESTERN RESERVE UNIVERSITY | RES514122 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 204,471 |
| AGING RESEARCH | 93.866 | CEDARS-SINAI MEDICAL CENTER | 0002115636 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 540,107 |
| AGING RESEARCH | 93.866 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200890622 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ (419) |
| AGING RESEARCH | 93.866 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002462 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 95,098 |
| AGING RESEARCH | 93.866 | COGNITION THERAPEUTICS, INC. | SUB TO RFLAG057780 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ (1,000) |
| AGING RESEARCH | 93.866 | COLUMBIA UNIVERSITY | 1(GG015275-01) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,365 |
| AGING RESEARCH | 93.866 | COLUMBIA UNIVERSITY | 1(GG015310-01) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 57,178 |
| AGING RESEARCH | 93.866 | COLUMBIA UNIVERSITY | 1(GG017425-01) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 182,489 |
| AGING RESEARCH | 93.866 | COLUMBIA UNIVERSITY | 2(GG017543-01) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,955 |
| AGING RESEARCH | 93.866 | COLUMBIA UNIVERSITY | 3(GG017449-01) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 51,653 |
| AGING RESEARCH | 93.866 | COLUMBIA UNIVERSITY | 3(GG017972-01) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 238,327 |
| AGING RESEARCH | 93.866 | DIAMED | 0422507120000 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 201,122 |
| AGING RESEARCH | 93.866 | DIAMIR, LLC | Sub to R44AG044860 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 59,241 |
| AGING RESEARCH | 93.866 | DUKE UNIVERSITY | 303000663 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,415 |
| AGING RESEARCH | 93.866 | EMORY UNIVERSITY | A175663 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ (20,014) |
| AGING RESEARCH | 93.866 | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | 0255-4864-4609 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,921 |
| AGING RESEARCH | 93.866 | INDIANA UNIVERSITY | 8545 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,254 |
| AGING RESEARCH | 93.866 | INDIANA UNIVERSITY | 9402-UP | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,980 |
| AGING RESEARCH | 93.866 | INDIANA UNIVERSITY | IN4683234UPEN CS | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 530,410 |
| AGING RESEARCH | 93.866 | JACKSON LABORATORY | 210386-0123-02 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 83,680 |
| AGING RESEARCH | 93.866 | JOHNS HOPKINS UNIVERSITY | 2003994974 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 712,517 |
| AGING RESEARCH | 93.866 | JOHNS HOPKINS UNIVERSITY | 2004028077 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 134,057 |
| AGING RESEARCH | 93.866 | KAISER FOUNDATION RESEARCH INSTITUTE | RNG211393-UPENN | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,692 |
| AGING RESEARCH | 93.866 | KAISER FOUNDATION RESEARCH INSTITUTE | RNG211397-UPENN | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 34,558 |
| AGING RESEARCH | 93.866 | KAISER FOUNDATION RESEARCH INSTITUTE | RNG211400-UPENN | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 116,871 |
| AGING RESEARCH | 93.866 | MASSACHUSETTS GENERAL HOSPITAL | 241746 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,319 |
| AGING RESEARCH | 93.866 | MAYO CLINIC JACKSONVILLE | UPA-282916 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,058 |
| AGING RESEARCH | 93.866 | MAYO CLINIC JACKSONVILLE | UPA-308985 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,693 |
| AGING RESEARCH | 93.866 | MAYO CLINIC ROCHESTER | UOP-263134 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 537,831 |
| AGING RESEARCH | 93.866 | MD ANDERSON CANCER CENTER | 3001879508 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 132,346 |
| AGING RESEARCH | 93.866 | NEW YORK UNIVERSITY | F1995-03 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,795 |
| AGING RESEARCH | 93.866 | NORTHERN CALIFORNIA INSTITUTE FOR RESEARCH AND EDUCATION | STE2196-18 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 46,020 |
| AGING RESEARCH | 93.866 | NORTHERN CALIFORNIA INSTITUTE FOR RESEARCH AND EDUCATION | WEI2015-14 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,773 |
| AGING RESEARCH | 93.866 | NORTHERN CALIFORNIA INSTITUTE FOR RESEARCH AND EDUCATION | WEI2015-17 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,979 |
| AGING RESEARCH | 93.866 | NORTHERN CALIFORNIA INSTITUTE FOR RESEARCH AND EDUCATION | WEI2990-16 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 411,394 |
| AGING RESEARCH | 93.866 | NORTHERN CALIFORNIA INSTITUTE FOR RESEARCH AND EDUCATION | WEI2990-21 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,214 |
| AGING RESEARCH | 93.866 | OHIO STATE UNIVERSITY | GR127022 PO-SPC-1000006679 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,432 |
| AGING RESEARCH | 93.866 | REGENERATIVE RESEARCH FOUNDATION | 5036-UPENN-02 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,306 |
| AGING RESEARCH | 93.866 | RUTGERS UNIVERSITY | 1967 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 114,539 |
| AGING RESEARCH | 93.866 | STANFORD UNIVERSITY | 61927487-133778 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 98 |
| AGING RESEARCH | 93.866 | STANFORD UNIVERSITY | 62680882-192702 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,656 |
| AGING RESEARCH | 93.866 | TEMPLE UNIVERSITY | 264720-PENN | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,486 |
| AGING RESEARCH | 93.866 | TUFTS MEDICAL CENTER | 5024879_SERV | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,823 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, IRVINE | 2022-1700 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,345 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1560 B WB344 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,288 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, SAN DIEGO | 705276 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,513 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 103873c | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ (143) |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 138583c | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 203,895 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 138709c | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,349 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 141313c | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,647 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 94093c | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,702 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CHICAGO | AWD101293 (SUB00000702) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,355 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF CHICAGO | AWD101518 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 82,278 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF COLORADO | FY21.1105.001 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 35,174 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF COLORADO DENVER | FY22.1105-001 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,999 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF FLORIDA | SUB00002681 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 81,215 |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000155 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - | \$ 111,982 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal ALN | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--|--|-----------------------------|-----------------|--------------------------|-------------------------------|-------------------------|
| Federal Awarding Agency/Program Title | | | | | | | |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000157 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000158 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000588 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000589 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000713 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000815 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00000816 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00001006 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00001086 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00001136 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00001139 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | OS00001142 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-000472 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-000516 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-001173 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-001202 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC001222 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-001223 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-001233 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-001337 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-001347 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MIAMI | SPC-001376 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MICHIGAN | SUBK00007532 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF MICHIGAN | SUBK00014875 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF OKLAHOMA | RS20220304-01 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF PITTSBURGH | 0058745131435-2 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF PITTSBURGH | AWD00003930 (137474-2) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF PITTSBURGH | AWD00003930 (137474-3) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 105710197 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 107888795 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 107890382 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 117340690 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 120113669 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 129204282 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 130284689 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 137298061 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 138398230 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | 79564962 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-0002475 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-0002505 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-0003388 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-0004383 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-0004527 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF SOUTHERN CALIFORNIA | sub to U01AG068057 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF WASHINGTON | UWSC10172 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF WASHINGTON | UWSC13008 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | UNIVERSITY OF WISCONSIN-MADISON | 785K492 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | VAN ANDEL INSTITUTE | 40546A-1 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | VANDERBILT UNIVERSITY | VUMC71547 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMCS896 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | WAKE FOREST UNIVERSITY | 101720-114751 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | WAKE FOREST UNIVERSITY | 1292-33664-11000000619 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | WAKE FOREST UNIVERSITY | WFUHS 551083 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | WAKE FOREST UNIVERSITY HEALTH SCIENCES | WFUHS 551083 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-22-0098 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | YALE UNIVERSITY | CON-80003041 (GR112866) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ - |
| AGING RESEARCH | 93.866 | YALE UNIVERSITY | CON-80003041 (GR112866) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ 12,473,104 |
| AGING RESEARCH | 93.866 | YALE UNIVERSITY | CON-80003041 (GR112866) | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ 70,020,909 |
| AIDS PROGRAMS & SPECIAL PHARMACY SERVICES | 93.917 | Pennsylvania Department of Health | PPA No. 19016 | \$ 17,521 | N/A | \$ - | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | EPIVARIO, LLC | SUB TO 1R41A030516-01 | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | HENRY M. JACKSON FOUNDATION | 5942 | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | RESEARCH FOUNDATION FOR MENTAL HYGIENE, INC. | POH 140111 | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | STONY BROOK | 88624/2/1162469 | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | THERANOVA, LLC | TNV21788-02 | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 10509sc | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | YALE UNIVERSITY | CON-80003377 (GR114506) | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | YALE UNIVERSITY | GR104469 (CON-80001475) | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ - |
| ALCOHOL RESEARCH PROGRAMS | 93.273 | YALE UNIVERSITY | GR104469 (CON-80001475) | \$ 3,519,209 | Research and Development | \$ 920,364,194 | \$ 2,877,804 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | AMERICAN GASTROENTEROLOGICAL ASSOCIATION | 2016002 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | AMERICAN GASTROENTEROLOGICAL ASSOCIATION | 2016003 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | AMERICAN GASTROENTEROLOGICAL ASSOCIATION | SUB TO R24A118629 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BENAROYA RESEARCH INSTITUTE | FY1711N224 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BENAROYA RESEARCH INSTITUTE | FY2011N389 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BENAROYA RESEARCH INSTITUTE | FY2011N348 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BENAROYA RESEARCH INSTITUTE | FY2011N369 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BENAROYA RESEARCH INSTITUTE | FY2111N527 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BETH ISRAEL DEACONESS MEDICAL CENTER | 01063718 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BOSTON CHILDREN'S HOSPITAL | GENFD0001487482 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BOSTON CHILDREN'S HOSPITAL | GENFD0001903586 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BOSTON CHILDREN'S HOSPITAL | GENFD0002094248 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | BOSTON CHILDREN'S HOSPITAL | GENFD0002161942 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awardee Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201540224 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 246,094 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201750624 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 72,909 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000464 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 37,548 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CHILDREN'S RESEARCH INSTITUTE | 30006393-01 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 51,616 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER | 309363 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,799 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER | 309364 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,522 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER | sub to R01-AL-145840 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 227,329 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CLEVELAND CLINIC LERNER COLLEGE OF MEDICINE | 959-SUB | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,009 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | COLUMBIA UNIVERSITY | 3 (GG013567-03) | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 251,933 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE CLINICAL RESEARCH INSTITUTE | A03-5346 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 104,869 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 1UM1-A1144371-01 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,082,895 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 203-1433 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 319 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 2036421 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,695 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 2037104 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 96,497 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 203-9727 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,671 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 303001433 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 349,322 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 303001438 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 108,858 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | A030469 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 172,291 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | A030915 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 631,617 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | A033564 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 32,846 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | A035447 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 147,204 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | SUB TO 5UM1-A1144371 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ (3,218) |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | A231031 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 221,315 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | A542882 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,000 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | A676815 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 77,525 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | A704725 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 123,106 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | T860086 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 599 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FHI 360 | HPTN 091 P020001123 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 213,787 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FHI 360 | HPTN-MGA- UPENN-1 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 73,883 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FHI 360 | P021000094 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 259,049 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FHI 360 | SUB TO UM1 A1068619 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 301,366 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FOX CHASE CHEMICAL DIVERSITY CENTER | 57-R41A1162385-Penn | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 131,241 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FOX CHASE CHEMICAL DIVERSITY CENTER | 95-R42A1138630-Penn | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 267,643 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FOX CHASE CHEMICAL DIVERSITY CENTER | G03-R42A170552-UP | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 288,614 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FRED HUTCHINSON CANCER CENTER | 0001053254 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,209 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FRED HUTCHINSON CANCER CENTER | 0001110317 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 186,555 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FRED HUTCHINSON CANCER CENTER | 0001137868 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 699 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | GEORGE WASHINGTON UNIVERSITY | 21-M97 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 124,150 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | INSTITUTE FOR CLINICAL RESEARCH, INC | M71-PN-110-1606-7 TASK ORDER | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,698 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | JOHNS HOPKINS UNIVERSITY | 2003649380 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,807 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | JOHNS HOPKINS UNIVERSITY | 200553918 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 37,562 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | LOYOLA UNIVERSITY OF CHICAGO | 1-210155 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,923 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | MASSACHUSETTS GENERAL HOSPITAL | 234438 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,506 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | MASSACHUSETTS GENERAL HOSPITAL | 234443 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 281,729 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | MASSACHUSETTS GENERAL HOSPITAL | 234447 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 563,969 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | MASSACHUSETTS GENERAL HOSPITAL | SUB TO U01A1136816 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,094 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | NATIONAL JEWISH HEALTH | 20123802-UPENN | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,135 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | NORTHWESTERN UNIVERSITY | 60060177 PENN | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 41,840 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | ROCKEFELLER UNIVERSITY | SUB00000340 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,827 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | SCRIPPS RESEARCH INSTITUTE | 5-54493 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 368,930 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | SCRIPPS RESEARCH INSTITUTE | 5-54809 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 198,860 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | STANFORD UNIVERSITY | 62773781-151206 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 295,091 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | TEMPLE UNIVERSITY | 268028-UPENN | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 128,943 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF ALABAMA AT BIRMINGHAM | 00053746-5C001 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,569 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, BERKELEY | 00010459 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 72,059 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1560 BW4857 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 731,870 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1560 G LB160 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 38,169 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1560 G WB030 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,313 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1560 G XC165 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,446 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1560 G YC895 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,432 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1560 G Z8545 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 57,081 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 12776ac | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ (42) |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 12972ac | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 360,968 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 9260sc | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,189 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF CHICAGO | AWD101500 (SUB00000396) | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 168,897 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF HOUSTON | R-17-0049 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ (541) |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF MASSACHUSETTS | OSP30517-01 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ (57) |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF MICHIGAN | SUBK00012761 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,397 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF MICHIGAN | SUBK00014269 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 140,207 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF PITTSBURGH | AWD00002849(135384-3) | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 244,221 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF PITTSBURGH | AWD00002849(135385-3) | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 537,604 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF SOUTHERN CALIFORNIA | SCON-0002341 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 85,397 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF WASHINGTON | UWSC14417 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 52,600 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMC64583 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 440,310 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMC65908 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,680 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMC78982 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 32,168 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WEIL CORNELL MEDICAL COLLEGE | 212094-05 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,344 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 25281-10-324 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ (13,888) |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 25281-12-324 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 73,047 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 25900-12-324 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 370,683 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 25900-52-324 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 122,429 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 25900-82-324 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 322,922 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 25900-82-324 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 104,409 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 29910-02-374 UPenn | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,864 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 29910-03-383 UPenn | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 187,878 |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | sub to UM1A164570 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ (8,506) |
| ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ 12,409,515 | \$ 66,890,454 |
| ALLOSTERIC IMPACT OF NON-ACTIVE-SITE MUTATIONS ON ENZYMATIC FUNCTION | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,282 |
| AMERICAN INDIAN CHRONIC RENAL INSUFFICIENCY COHORT STUDY - AI-CRIC | 93.047 | UNIVERSITY OF NEW MEXICO HEALTH SCIENCES CENTER | 3RGL2 | \$ 252,973 | Research and Development | \$ 920,364,194 | \$ - | \$ 252,973 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | BRIGHAM AND WOMEN'S HOSPITAL | 119899 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,234 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | CADENZAMED LLC | SUB TO R43AR076265 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,634 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | CFD RESEARCH CORPORATION (CFDRC) | 206970 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,702 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000242 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 415,420 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | DREXEL UNIVERSITY | 900024 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 41,219 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | DREXEL UNIVERSITY | 900036 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ (201) |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | 0255-6021-4609 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,338 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | NEW YORK UNIVERSITY | 16-A0-00-005518-01 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ (9,705) |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | NEW YORK UNIVERSITY | 18-A1-00-1000572 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 75,301 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | NEW YORK UNIVERSITY GROSSMAN SCHOOL OF MEDICINE | 21-A0-00-1006833 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 207,643 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | TEMPLE UNIVERSITY | 258416-UP | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,292 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | THOMAS JEFFERSON UNIVERSITY | 080-23000-S27201 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,279 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | THOMAS JEFFERSON UNIVERSITY | 080-23000-S38001 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 111,782 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | UNIVERSITY OF CALIFORNIA, IRVINE | 2021-1479 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 52,309 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | UNIVERSITY OF ROCHESTER | SUB00000302/UR FAO:GR532319 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,458 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | UNIVERSITY OF SOUTHERN CALIFORNIA | 116442662 | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,851 |
| ARTRHITIS, MUSCULOSKELETAL AND SKIN DISEASES RESEARCH | 93.846 | | | \$ 21,949,013 | Research and Development | \$ 920,364,194 | \$ 1,769,318 | \$ 20,857,457 |
| ASSESSMENT OF THE EFFICACY OF ACUTE PAIN TREATMENTS: AN RTC RE-ANALYSI | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 764,302 |
| ASSISTANCE PROGRAMS FOR CHRONIC DISEASE PREVENTION AND CONTROL | 93.945 | CROHN'S & COLITIS FOUNDATION OF AMERICA | sub to 1-U01-DP-006369-01-00 | \$ 291,716 | Research and Development | \$ 920,364,194 | \$ - | \$ 291,716 |
| AUTISM COLLABORATION, ACCOUNTABILITY, RESEARCH, EDUCATION, AND SUPPORT | 93.877 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 2000 G YC805 | \$ 243,438 | Research and Development | \$ 920,364,194 | \$ - | \$ 243,438 |
| BACTERIAL INTERFERENCE TO PREVENT STAPHYLOCOCCUS AUREUS INFECTION | 93.RD | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201270822 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,498 |
| BEAT-HIV: DELANEY COLLABORATORY TO CURE HIV-1 INFECTION BY COMBINATION | 93.RD | WISTAR INSTITUTE | 25900-32-324 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 365,391 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | ADVENTUM ENTERPRISES, LLC | 7006-001-001-004 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 23,320 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | BRIGHAM YOUNG UNIVERSITY | 20-0552 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,583 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | CARNEGIE MELLON UNIVERSITY | 10906931-432700 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 37,869 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | NORTHWESTERN UNIVERSITY | 60951124 UPENN | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,977 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | PENNSYLVANIA STATE UNIVERSITY | 6093-UP-DIHHS-2653 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,636 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | PURDUE UNIVERSITY | 11001041-060 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,746 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | RUTGERS UNIVERSITY | 1702 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,773 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | SAINT LOUIS UNIVERSITY | eRS42228-45656 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,487 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1445 G UE023 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ (2,428) |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 12945c | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 87,421 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | UNIVERSITY OF ILLINOIS | 105585-19003 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 156,786 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | UNIVERSITY OF MICHIGAN | SUBK00012742 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 107,342 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | UNIVERSITY OF SOUTH FLORIDA | 1210-1115-00-A | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,105 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | UNIVERSITY OF WISCONSIN-MADISON | 0000009933 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,035 |
| BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | | | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ 890,125 | \$ 44,817,061 |
| BLOCK GRANTS FOR COMMUNITY MENTAL HEALTH SERVICES | 93.958 | CITY OF PHILADELPHIA | PAC 0100-0294 | \$ 1,132,253 | N/A | \$ - | \$ - | \$ 37 |
| BLOCK GRANTS FOR COMMUNITY MENTAL HEALTH SERVICES | 93.958 | PENNSYLVANIA DEPARTMENT OF HUMAN SERVICES | 4100091732 | \$ 1,132,253 | N/A | \$ - | \$ - | \$ 26,333 |
| BLOCK GRANTS FOR PREVENTION AND TREATMENT OF SUBSTANCE ABUSE | 93.959 | PENNSYLVANIA DEPARTMENT OF DRUG AND ALCOHOL | 4100093464 | \$ 464,964 | N/A | \$ - | \$ - | \$ 159,100 |
| BLOCK GRANTS FOR PREVENTION AND TREATMENT OF SUBSTANCE ABUSE | 93.959 | Pennsylvania Department of Health | SAP# 4100090517 | \$ 464,964 | N/A | \$ - | \$ - | \$ 305,864 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | BOSTON CHILDREN'S HOSPITAL | GENFD0002069091 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 47,738 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200770621/962617-RSUB | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 104,103 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201710624 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 91,321 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3210081122 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,055 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000690 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,645 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001857 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 427,676 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | CLEVELAND CLINIC LERNER COLLEGE OF MEDICINE | 1187-SUB | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 56,430 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | CORIELL INSTITUTE (CORIELL CELL REPOSITORIES) | A22-0003-S003 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 83,339 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | DUKE UNIVERSITY | A034441 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 203,637 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | HACKENSACK MERIDIAN HEALTH | 2205-G10159 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,816 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | INDIANA UNIVERSITY | IN4687667UPenn | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 100,150 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | NEW YORK UNIVERSITY GROSSMAN SCHOOL OF MEDICINE | 21-A2-00-1004666 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,805 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | NORTHWESTERN UNIVERSITY | 60056523 PENN | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,275 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | RESEARCH TRIANGLE INSTITUTE | MOU SUB TO U24HD095254 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 110,646 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | RUTGERS UNIVERSITY | SUB0151 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,150 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | TEMPLE UNIVERSITY | 270172-UPENN | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,042 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | VASOWATCH, LLC | SUB TO R41HL164191 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,094 |
| BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | | | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ 1,754,962 | \$ 12,071,890 |
| BLOOD DISORDER PROGRAM: PREVENTION, SURVEILLANCE, AND RESEARCH | 93.080 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 8901210000 | \$ 6,121 | Research and Development | \$ 920,364,194 | \$ - | \$ (2,359) |
| BLOOD DISORDER PROGRAM: PREVENTION, SURVEILLANCE, AND RESEARCH | 93.080 | LEHIGH VALLEY HEALTH NETWORK | ATHN_22_23_012 | \$ 6,121 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,480 |
| BUILDING COVID-19 VACCINE CONFIDENCE AMONG NURSING STUDENTS, NURSES, A | 93.RD | AMERICAN ASSOCIATION OF COLLEGES OF NURSING | SUB TO 6 NUS30E000009-05-01 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,890 |
| CANCER BIOLOGY RESEARCH | 93.396 | BRIGHAM AND WOMEN'S HOSPITAL | 118360 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ (1) |
| CANCER BIOLOGY RESEARCH | 93.396 | COLUMBIA UNIVERSITY | 3(GG017813-01) | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,031 |
| CANCER BIOLOGY RESEARCH | 93.396 | JOHNS HOPKINS UNIVERSITY | 2004720261 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 178,725 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| CANCER BIOLOGY RESEARCH | 93.396 | JOHNS HOPKINS UNIVERSITY | 2005928203 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 118,560 |
| CANCER BIOLOGY RESEARCH | 93.396 | KAISER PERMANENTE | RNG209451-PENN-01 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 312,869 |
| CANCER BIOLOGY RESEARCH | 93.396 | LANKENAU INSTITUTE FOR MEDICAL RESEARCH | 06301-3431 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,273 |
| CANCER BIOLOGY RESEARCH | 93.396 | MID ANDERSON CANCER CENTER | 3002015360 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 44,646 |
| CANCER BIOLOGY RESEARCH | 93.396 | MEMORIAL SLOAN-KETTERING CANCER CENTER | 80522705 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 99,581 |
| CANCER BIOLOGY RESEARCH | 93.396 | RUSH UNIVERSITY | 21080606-Sub01 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,605 |
| CANCER BIOLOGY RESEARCH | 93.396 | STANFORD UNIVERSITY | 63057881-200785 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,716 |
| CANCER BIOLOGY RESEARCH | 93.396 | UNIVERSITY OF ALABAMA AT BIRMINGHAM | 000531784-SC003 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 93,957 |
| CANCER BIOLOGY RESEARCH | 93.396 | UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER | GMO-200704 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,740 |
| CANCER BIOLOGY RESEARCH | 93.396 | UNIVERSITY OF VIRGINIA | GB10749 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 95,582 |
| CANCER BIOLOGY RESEARCH | 93.396 | WISTAR INSTITUTE | 25241-02-370 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 377 |
| CANCER BIOLOGY RESEARCH | 93.396 | WISTAR INSTITUTE | 25491-02-363 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,330 |
| CANCER BIOLOGY RESEARCH | 93.396 | WISTAR INSTITUTE | 25681-02-373 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,299 |
| CANCER BIOLOGY RESEARCH | 93.396 | WISTAR INSTITUTE | 25762-02-366 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,219 |
| CANCER BIOLOGY RESEARCH | 93.396 | WISTAR INSTITUTE | 25820-03-369 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,060 |
| CANCER BIOLOGY RESEARCH | 93.396 | WISTAR INSTITUTE | 29017-03-382 | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 64,080 |
| CANCER BIOLOGY RESEARCH | 93.396 | | | \$ 18,355,305 | Research and Development | \$ 920,364,194 | \$ 1,684,624 | \$ 17,158,655 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | BAYLOR COLLEGE OF MEDICINE | 7000001740 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,999 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | BECKMAN RESEARCH INSTITUTE OF THE CITY OF HOPE | 63147.2010090.669302 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,566 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | FRED HUTCHINSON CANCER CENTER | 0001110119 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,859 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | HARVARD MEDICAL SCHOOL | 1057501 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,888 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | HARVARD UNIVERSITY | 115005-5117695 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,913 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | HARVARD UNIVERSITY | 117202-5111676 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,297 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | HOUSTON METHODIST CANCER CENTER | AGMT0008242 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,169 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | MAYO CLINIC ROCHESTER | UNI-306521 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,366 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | NEW YORK UNIVERSITY | 20-A1-00-1003518 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,491 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | OHIO STATE UNIVERSITY | 60064995 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,570 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | OHIO STATE UNIVERSITY | SPC-100001311 GR130893 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,784 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | SUNY DOWNSTATE MEDICAL CENTER | 100-1168659-91446 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,375 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | UNIVERSITY OF CALIFORNIA, DAVIS | A18-0177-5014 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ (20) |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | UNIVERSITY OF CALIFORNIA, DAVIS | A22-1534-5006 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,112 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1647 G CA089 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 67,659 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | UNIVERSITY OF CHICAGO | AWD101267 (SUB00000394) | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 427,108 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | UNIVERSITY OF SOUTHERN CALIFORNIA | 125902890 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,508 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | WAKE FOREST UNIVERSITY HEALTH SCIENCES | 477-101730-114410 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,989 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | WISTAR INSTITUTE | 25893-02-384 | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,047 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | YALE UNIVERSITY | GR108743(CON-80002262) | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ - | \$ 152,345 |
| CANCER CAUSE AND PREVENTION RESEARCH | 93.393 | | | \$ 12,455,394 | Research and Development | \$ 920,364,194 | \$ 1,459,364 | \$ 11,394,369 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | COLUMBIA UNIVERSITY | 1(GG012789-18) PROJECT 2 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,010 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | DANA-FARBER CANCER INSTITUTE | 1204903 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 75,853 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | JOHNS HOPKINS UNIVERSITY | 2003261994 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,636 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | JOHNS HOPKINS UNIVERSITY | 2004131859 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 633,380 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | 55595 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 382,939 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | MAYO CLINIC ROCHESTER | THE-182363 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 34,983 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | MD ANDERSON CANCER CENTER | 3001631191 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,479 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | MD ANDERSON CANCER CENTER | sub to P50CA221707 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,996 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | WISTAR INSTITUTE | 29050-06-314 PROJECT 3 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 280,202 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | WISTAR INSTITUTE | 29050-08-314 | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 298,084 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | WISTAR INSTITUTE | 29050-09-314; CORE B | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 275,444 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | WISTAR INSTITUTE | 29050-10-314 CORE C | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ - | \$ 152,123 |
| CANCER CENTERS SUPPORT GRANTS | 93.397 | | | \$ 11,651,337 | Research and Development | \$ 920,364,194 | \$ 450,598 | \$ 9,421,208 |
| CANCER CONTROL | 93.399 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | UG1CA189828-06-UPA3 | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 67,248 |
| CANCER CONTROL | 93.399 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | UG1CA189828-07-UPA6 | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 23,691 |
| CANCER CONTROL | 93.399 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | UG1CA189828-08-UPA7 | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,168 |
| CANCER CONTROL | 93.399 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | UG1CA189828-08-UPA8 | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,161 |
| CANCER CONTROL | 93.399 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | UG1CA189828-08-UPA-EA2185 | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,000 |
| CANCER CONTROL | 93.399 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | UG1CA89828-06-UPA4 | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,371 |
| CANCER CONTROL | 93.399 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | 1014562_UPENN | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,869 |
| CANCER CONTROL | 93.399 | OREGON HEALTH & SCIENCE UNIVERSITY | | \$ 2,305,065 | Research and Development | \$ 920,364,194 | \$ 73,487 | \$ 2,095,557 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | AKROTOME, INC. | SUB TO R44CA272087 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,903 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | CASE WESTERN RESERVE UNIVERSITY | RES511172 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ (2,559) |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | CASE WESTERN RESERVE UNIVERSITY | RES514087 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,515 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | CASE WESTERN RESERVE UNIVERSITY | RES601016 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,200 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001548 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 82,693 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | IDGRT-00000367 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,780 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | DANA-FARBER CANCER INSTITUTE | 1308603 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,733 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | 2U24CA196172-06-UPA1 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,000 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | 2U24CA196172-06-UPA2 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 23,333 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | EMORY UNIVERSITY | A723053 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,593 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | JOHNS HOPKINS UNIVERSITY | SUB TO U01CA210170 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,082 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | MAYO CLINIC ROCHESTER | PEN-216870 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 198,408 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | MAYO CLINIC ROCHESTER | THE-216870 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,903 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | MD ANDERSON CANCER CENTER | 3001900167 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,107 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | MEDICAL UNIVERSITY OF SOUTH CAROLINA | A20-0088-S002 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ 27,029 | \$ 183,841 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | MEMORIAL SLOAN-KETTERING CANCER CENTER | 1945363 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,331 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | MEMORIAL SLOAN-KETTERING CANCER CENTER | SUB TO R01CA255655 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,342 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | NEW YORK UNIVERSITY | 19-A1-00-1002648 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 335,509 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | NORTHWESTERN UNIVERSITY | 60058933 PENN | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 87,196 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 10724sc | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,333 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | UNIVERSITY OF KANSAS MEDICAL CENTER | GR15769 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,832 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5114713 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 48,766 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER | GMO 231023 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 107,567 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | UNIVERSITY OF WASHINGTON | UWCS13971 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 228,608 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | VERGENT BIOSCIENCE, INC | VGT-309-2-2021USA - Singhal | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 303,987 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | XEMED LLC | SUB TO R01CA255434-01 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 367,986 |
| CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | | | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ 1,561,920 | \$ 13,085,429 |
| CANCER RESEARCH MANPOWER | 93.398 | | | \$ 6,361,370 | Research and Development | \$ 920,364,194 | \$ 476,095 | \$ 6,361,370 |
| CANCER TREATMENT RESEARCH | 93.395 | (UNASSIGNABLE) MOUNT SINAI MEDICAL CENTER | 0254-3503-4605 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,682 |
| CANCER TREATMENT RESEARCH | 93.395 | AIDS MALIGNANCY CONSORTIUM | SUB TO UM1CA121947 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 57,159 |
| CANCER TREATMENT RESEARCH | 93.395 | ALPHATHERA | SUB TO R44CA221374-02 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 129,912 |
| CANCER TREATMENT RESEARCH | 93.395 | AMERICAN COLLEGE OF RADIOLOGY | 1823 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 666,939 |
| CANCER TREATMENT RESEARCH | 93.395 | APREA THERAPEUTICS | APR-001 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 56,615 |
| CANCER TREATMENT RESEARCH | 93.395 | BRIGHAM AND WOMEN'S HOSPITAL | 121298 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,584 |
| CANCER TREATMENT RESEARCH | 93.395 | CASE WESTERN RESERVE UNIVERSITY | RES516736 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 38,688 |
| CANCER TREATMENT RESEARCH | 93.395 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-0000465 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,436 |
| CANCER TREATMENT RESEARCH | 93.395 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | U10CA180820-06UPA1A | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 186,667 |
| CANCER TREATMENT RESEARCH | 93.395 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | U10CA180820-06-UPA2A | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,938 |
| CANCER TREATMENT RESEARCH | 93.395 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | U10CA180820-06-UPA2C | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,970 |
| CANCER TREATMENT RESEARCH | 93.395 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | U-10-CA-180820-06UPASC | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,227 |
| CANCER TREATMENT RESEARCH | 93.395 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | U10CA180820-06UPAGC | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,667 |
| CANCER TREATMENT RESEARCH | 93.395 | ECOG-ACRIN MEDICAL RESEARCH FOUNDATION, INC | U10CA180820-06-U PA3A | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 116,193 |
| CANCER TREATMENT RESEARCH | 93.395 | EMMS CORPORATION | 7 UM1CA121947-15 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,003 |
| CANCER TREATMENT RESEARCH | 93.395 | EMMS CORPORATION | SUB TO 2UM1CA121947-14 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 136,718 |
| CANCER TREATMENT RESEARCH | 93.395 | FRONTIER SCIENCE & TECHNOLOGY RESEARCH FDN | ECOG PURCHASE SERVICE AGREEMENT | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 255,868 |
| CANCER TREATMENT RESEARCH | 93.395 | HARVARD MEDICAL SCHOOL | 235481 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,651 |
| CANCER TREATMENT RESEARCH | 93.395 | JOHNS HOPKINS UNIVERSITY | ABTC 1801 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,374 |
| CANCER TREATMENT RESEARCH | 93.395 | MASSACHUSETTS GENERAL HOSPITAL | 231928 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 80,908 |
| CANCER TREATMENT RESEARCH | 93.395 | NRG ONCOLOGY | 04-225-0712 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 162,965 |
| CANCER TREATMENT RESEARCH | 93.395 | NRG ONCOLOGY | NRG-Langer-GY6 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,000 |
| CANCER TREATMENT RESEARCH | 93.395 | NRG ONCOLOGY | NRG-Pryma-GY6 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,000 |
| CANCER TREATMENT RESEARCH | 93.395 | NRG ONCOLOGY | NRG-Xiao-GY6 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,157 |
| CANCER TREATMENT RESEARCH | 93.395 | ONCOSTING LLC | SUB TO 1844CA261506-01A1 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ (50) |
| CANCER TREATMENT RESEARCH | 93.395 | PUBLIC HEALTH INSTITUTE | AR04419 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,500 |
| CANCER TREATMENT RESEARCH | 93.395 | RTOG FOUNDATION, INC. | UPENM-NCTN-YRG-11 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 194,328 |
| CANCER TREATMENT RESEARCH | 93.395 | UNIVERSITY OF BUFFALO | R127589 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,715 |
| CANCER TREATMENT RESEARCH | 93.395 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 1670 G WC216 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,652 |
| CANCER TREATMENT RESEARCH | 93.395 | UNIVERSITY OF CHICAGO | AWD102962 (SUB00000685) | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 193,581 |
| CANCER TREATMENT RESEARCH | 93.395 | UNIVERSITY OF NEBRASKA | 34-2005-2096-001 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 114,357 |
| CANCER TREATMENT RESEARCH | 93.395 | UNIVERSITY OF NEW MEXICO HEALTH SCIENCES CENTER | 3RFW6 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,463 |
| CANCER TREATMENT RESEARCH | 93.395 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-22-0114 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 275,523 |
| CANCER TREATMENT RESEARCH | 93.395 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-22-0269 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 56,011 |
| CANCER TREATMENT RESEARCH | 93.395 | WISTAR INSTITUTE | 24926-04-314 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 539,079 |
| CANCER TREATMENT RESEARCH | 93.395 | WISTAR INSTITUTE | 24926-13-314 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ 180,341 |
| CANCER TREATMENT RESEARCH | 93.395 | WISTAR INSTITUTE | sub to P01CA114046 | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ - | \$ (16,291) |
| CANCER TREATMENT RESEARCH | 93.395 | | | \$ 19,117,616 | Research and Development | \$ 920,364,194 | \$ 1,935,492 | \$ 15,361,085 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | ATTUNE MEDICAL | sub to R44HL158375 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 253,574 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | BECKMAN RESEARCH INSTITUTE OF THE CITY OF HOPE | 61695.2007934.669303 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,920 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | BETH ISRAEL DEACONESS MEDICAL CENTER | 01064417 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 35,170 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | BOSTON UNIVERSITY | 4500020522 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 302,715 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | BRIGHAM AND WOMEN'S HOSPITAL | SUB TO 1U01HL23336/AS332/AS333 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,384 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | CARDIOSOLV ABLATION TECHNOLOGIES, INC | SUB TO R44HL124901 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,957 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-0000005 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 106,047 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000659-0822-S1 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,482 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000659-0823-S2 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 35,998 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001011 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 83,413 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002339 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 12,762 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | COLUMBIA UNIVERSITY | 1(GG012810-01) | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 162,163 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | COLUMBIA UNIVERSITY | 1(GG015877-01) | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 134,439 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | COLUMBIA UNIVERSITY | 1(GG018833-01) | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,618 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | COLUMBIA UNIVERSITY | 2(GG017930-01) | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 196,673 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | DREXEL UNIVERSITY | 900181 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,348 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | DUKE UNIVERSITY | 303000404 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 88,254 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | GEORGE WASHINGTON UNIVERSITY | SUB TO U24HL140168 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ (3,793) |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | 0255-E031-4609 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 41,282 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | 0255-E041-4609 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 87,629 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | INDIANA UNIVERSITY | IN4665776PENN | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,539 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | MASSACHUSETTS GENERAL HOSPITAL | 234357 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 159,412 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | MASSACHUSETTS GENERAL HOSPITAL | SUB TO1R01HL130539-01A1 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ (2,101) |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | MEDICAL COLLEGE OF WISCONSIN | SUB TO R01HL142791 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 200,965 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | NORTHWESTERN UNIVERSITY | 6005835 UPENN | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 62,758 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | NORTHWESTERN UNIVERSITY | 60060152 PENN | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,274 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | OHIO STATE UNIVERSITY | GR127216 SPC-1000006756 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 100,403 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | PROHIBIX, LLC | SUB TO R44HL140645 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 154,779 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|--|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | RESEARCH TRIANGLE INSTITUTE | 9-312-0217457-66026L | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 237,289 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | ROCHESTER INSTITUTE OF TECHNOLOGY | 31998-01 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 148,881 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | STANFORD UNIVERSITY | 62473906-137321 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,602 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | THOMAS JEFFERSON UNIVERSITY | 080-18007-536301 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,775 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | TULANE UNIVERSITY | TUL-HSC-559473-23/22 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 74,469 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | TULANE UNIVERSITY | TUL-HSC-560895-22/23 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,702 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF ALABAMA AT BIRMINGHAM | 000520812-SC021 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 61,615 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF BUFFALO | R1337579 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 205,196 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF CALIFORNIA, BERKELEY | 00011001 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,022 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 12918sc | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,720 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF COLORADO | 1562492 | \$ 133,541 | Research and Development | \$ 920,364,194 | \$ - | \$ 133,541 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF CONNECTICUT | UCHC7-122008437 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ (135) |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF FLORIDA | SUB00003130 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,778 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF FLORIDA | SUB00003145 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 38,207 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF ILLINOIS | 097337-17723 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 88,286 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF MICHIGAN | SUBK00012346 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 69,792 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF MINNESOTA | N006187419 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ (3,982) |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5120345 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,194 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5124130 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,176 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF PITTSBURGH MEDICAL CENTER | AWD00004314 (137168-25A) | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,550 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF ROCHESTER | SUB00000527/GRS33468 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 79,589 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF SOUTH FLORIDA | 6143-1210-00-B | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 634 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF TEXAS AT AUSTIN | UTA18-00758 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 211,203 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT SAN ANTONIO | 172393/172293 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 278,251 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER | GMO 230907 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 110,211 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | UNIVERSITY OF WASHINGTON | UWSC8520 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ 44,500 | \$ 59,500 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | YALE UNIVERSITY | GR102136 (CN-80001158) | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,263 |
| CARDIOVASCULAR DISEASES RESEARCH | 93.837 | | | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ 3,585,005 | \$ 34,744,802 |
| CHILD ABUSE AND NEGLECT STATE GRANTS | 93.669 | Lancaster County Children & Youth | N/A | \$ 34,903 | N/A | \$ - | \$ - | \$ 30,782 |
| CHILD ABUSE AND NEGLECT STATE GRANTS | 93.669 | Pennsylvania Commission on Crime & Delinquency | 39715 | \$ 34,903 | N/A | \$ - | \$ - | \$ 4,121 |
| CHILD ABUSE PREVENTION PROGRAM | 93.590 | Pennsylvania Department of Human Services | 4100090571 | \$ 50,000 | N/A | \$ - | \$ - | \$ 50,000 |
| CHILD CARE AND DEVELOPMENT BLOCK GRANT | 93.575 | PUBLIC HEALTH MANAGEMENT CORPORATION | 8690062213 | \$ 165,224 | CCDF CLUSTER | \$ 165,224 | \$ - | \$ 2,087 |
| CHILD CARE AND DEVELOPMENT BLOCK GRANT | 93.575 | PUBLIC HEALTH MANAGEMENT CORPORATION | 8690062336 | \$ 165,224 | CCDF CLUSTER | \$ 165,224 | \$ - | \$ 163,137 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CENTRAL MICHIGAN UNIVERSITY | F6374 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,388 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200830522 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 107,734 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200880522 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 64,739 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201320522 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 70,784 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201340523 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,203 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201440523 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,873 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201860524 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 134,858 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3207930625 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,837 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001147 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,022 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000289 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 32,048 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000601 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,849 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000713 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,733 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001494-0523-XX | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 51,636 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001495-XX | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,603 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002262 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,805 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002377 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 38,388 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002485 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,228 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | COLUMBIA UNIVERSITY | 4(GG011848-01) | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,717 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | DREXEL UNIVERSITY | 900012 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 49,078 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | EMORY UNIVERSITY | A403216 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,598 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | FLORIDA STATE UNIVERSITY | R00003134 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,406 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | GEORGE WASHINGTON UNIVERSITY | SUB TO U10HD036801 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,513 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | GEORGE WASHINGTON UNIVERSITY | SUB TO U10HD036801 (CMV)/MFMU | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ (78,022) |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | GEORGE WASHINGTON UNIVERSITY | SUB TO U10HD036801/MFMU TOPS | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 248 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | GEORGE WASHINGTON UNIVERSITY | SUB TO U10HD036801/MFMU40C PROSPECT | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 580 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | IFIT PROSTHETICS | SUB TO 1R42HD107747-01 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ 22,641 | \$ 204,399 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | JOHNS HOPKINS UNIVERSITY | 2004123438 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 189,863 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | JOHNS HOPKINS UNIVERSITY | 2004462188 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 12,680 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | JOHNS HOPKINS UNIVERSITY | SUB TO R01HD100341 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,037 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | MOSS REHABILITATION RESEARCH INSTITUTE | 4934 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 23,962 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | NORTHWESTERN UNIVERSITY | 60046347 PENN | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,809 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | PENNSYLVANIA STATE UNIVERSITY | UPENNHD083323 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,533 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | RECUPER ROBOTICS LLC | SUB TO R42HD104325 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 141,259 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | RESEARCH TRIANGLE INSTITUTE | PFDN CAPITATION FUNDING | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,865 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | STANFORD UNIVERSITY | 62613539-153996 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,107 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | STATE UNIVERSITY OF NEW YORK | 77545-1138238-2 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ 31,794 | \$ 143,071 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | THOMAS JEFFERSON UNIVERSITY | 618-84436-SE4971 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 316,040 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 13499sc | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,911 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF MICHIGAN | SUBK00015994 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,207 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF MICHIGAN | SUBK00018286 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,199 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF MISSOURI | 00079352-4 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,909 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---|--------------------|---|---|-----------------------|-------------------------------|----------------|----------------------------|----------------------|
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF MISSOURI | C00079352-8 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 136,555 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,606 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5116605 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ 65,115 | \$ 65,115 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5124941 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ 353,845 | \$ 526,262 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF OKLAHOMA | PS02019141-01 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,564 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | VIRGINIA COMMONWEALTH UNIVERSITY | FP00008368_SAO01 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,580 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | YALE UNIVERSITY | CON-80004544 (GR120542) | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,402 |
| CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ 2,342,740 | \$ 14,476,769 |
| CIVICS - COMPONENT A | 93.RD | DUKE UNIVERSITY | A032640 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,169,831 |
| CLINICAL AND MOLECULAR DETERMINANTS OF TRANSMISSION OF ESBLs IN THE CO | 93.RD | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ 18,656 | \$ 95,048 |
| CLINICAL EVALUATION OF NESTORONE (NES) AND TESTOSTERONE (T) COMBINATIO | 93.RD | UNIVERSITY OF WASHINGTON | UWSC11767 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 138,421 |
| COMMUNITY SERVICES BLOCK GRANT | 93.569 | CITY OF PHILADELPHIA | 2320614 | \$ 76,778 | 477 CLUSTER | \$ 76,778 | \$ - | \$ 66,834 |
| COMMUNITY SERVICES BLOCK GRANT | 93.569 | CITY OF PHILADELPHIA | CSBG | \$ 76,778 | 477 CLUSTER | \$ 76,778 | \$ - | \$ 9,944 |
| CONSOLIDATED HEALTH CENTERS (COMMUNITY HEALTH CENTERS, MIGRANT HEALTH CENTERS, HEALTH CARE FOR THE HOMELESS, AND PUBLIC HOUSING PRIMARY CARE) | 93.224 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 13193sc | \$ 8,987 | HEALTH CENTER PROGRAM CLUSTER | \$ 153,673 | \$ - | \$ 8,987 |
| CONSULTANT TO THE TOOLBOX PROJECT: LEARNING, EVALUATION AND RESEARCH C | 93.RD | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,696 |
| CONTINUED ASSESSMENT OF THE EFFICACY OF CHRONIC OPIOID PAIN TREATMENTS | 93.RD | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 328,139 |
| COOPERATIVE AGREEMENTS FOR STATE-BASED COMPREHENSIVE BREAST AND CERVICAL CANCER EARLY DETECTION PROGRAMS | 93.919 | Family Health Council of Central PA | N/A | \$ 72,002 | N/A | \$ - | \$ - | \$ 72,002 |
| COVID-19 - A MULTICENTER, ADAPTIVE, RANDOMIZED BLINDED CONTROLLED TRIAL OF THE SA | 93.RD | LEIDOS BIOMEDICAL RESEARCH, INC | 20CTA-DM0009 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 515,488 |
| COVID-19 - A MULTICENTER, ADAPTIVE, RANDOMIZED CONTROLLED PLATFORM TRIAL OF THE S | 93.RD | BLOODCENTER OF WISCONSIN, INC. | SUB TO 012HL156812 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,387 |
| COVID-19 - AGING RESEARCH | 93.866 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 82,836,060 | Research and Development | \$ 920,364,194 | \$ 28,482 | \$ 462,699 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | ARIZONA STATE UNIVERSITY | ASU800001155 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,587 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER | sub to R01-AI-145840 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 164,765 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | COLUMBIA UNIVERSITY | 1(GG01735-03) | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 127,986 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | DUKE UNIVERSITY | 930300026 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 401,693 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | AS34337 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 468,148 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | AS39852 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 166,939 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | A682009 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 95,381 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | EMORY UNIVERSITY | A731018 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 246,882 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FOX CHASE CHEMICAL DIVERSITY CENTER | G05-R41A1172464-UP | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 77,444 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FRED HUTCHINSON CANCER CENTER | 0001029082 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 251 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | FRED HUTCHINSON CANCER CENTER | 0001038427 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 351,042 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | JOHNS HOPKINS UNIVERSITY | 2005285933 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 90,789 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | 55729 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 231,964 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | SCRIPPS RESEARCH INSTITUTE | 5-54843 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 878,340 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF COLORADO DENVER | FY21.600.003 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 271,817 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5125060 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 282,392 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5125063 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 281,848 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | WISTAR INSTITUTE | 25936-05-374_UPenn | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,697 |
| COVID-19 - ALLERGY, IMMUNOLOGY AND TRANSPLANTATION RESEARCH | 93.855 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 89,130,796 | Research and Development | \$ 920,364,194 | \$ 417,186 | \$ 4,791,650 |
| COVID-19 - AT HOME MICROBUBBLING SARS-COV-2 ANTIGEN TEST | 93.RD | INSTANOSIS, INC. | SUB TO 75A50122C00026 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,004 |
| COVID-19 - BIOMEDICAL RESEARCH AND RESEARCH TRAINING | 93.859 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 45,745,061 | Research and Development | \$ 920,364,194 | \$ - | \$ 236,368 |
| COVID-19 - BLOOD DISEASES AND RESOURCES RESEARCH | 93.839 | AMERICAN ASSOCIATION OF COLLEGES OF NURSING | SUB TO 6 NU360E000009-05-01 | \$ 14,279,585 | Research and Development | \$ 920,364,194 | \$ 203,225 | \$ 801,773 |
| COVID-19 - BUILDING COVID-19 VACCINE CONFIDENCE AMONG NURSING STUDENTS, NURSES, A | 93.839 | AMERICAN ASSOCIATION OF COLLEGES OF NURSING | SUB TO 6 NU360E000009-05-01 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,739 |
| COVID-19 - CANCER DETECTION AND DIAGNOSIS RESEARCH | 93.394 | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | 0255-A343-4605 | \$ 15,347,402 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,984 |
| COVID-19 - CARDIOVASCULAR DISEASES RESEARCH | 93.837 | TULANE UNIVERSITY | TUL-HSC-559479-21/22 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ (11,387) |
| COVID-19 - CARDIOVASCULAR DISEASES RESEARCH | 93.837 | TULANE UNIVERSITY | TUL-HSC-559479-21/22 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,280 |
| COVID-19 - CARDIOVASCULAR DISEASES RESEARCH | 93.837 | TULANE UNIVERSITY | TUL-HSC-559479-21/22 | \$ 40,461,626 | Research and Development | \$ 920,364,194 | \$ 229,305 | \$ 1,423,079 |
| COVID-19 - CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | GEORGE WASHINGTON UNIVERSITY | SUB TO U10HD036801 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,257 |
| COVID-19 - CHILD HEALTH AND HUMAN DEVELOPMENT EXTRAMURAL RESEARCH | 93.865 | GEORGE WASHINGTON UNIVERSITY | SUB TO U10HD036801 | \$ 18,448,062 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,119,165 |
| COVID-19 - DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ 335,285 | \$ 1,569,030 |
| COVID-19 - DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001582 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 84,605 |
| COVID-19 - EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | TEMPLE UNIVERSITY | 269885-UPENN | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,370 |
| COVID-19 - EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | TEMPLE UNIVERSITY | 269885-UPENN | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,818 |
| COVID-19 - FOOD AND DRUG ADMINISTRATION RESEARCH | 93.103 | GEORGE MASON UNIVERSITY | E2062271 | \$ 1,273,808 | Research and Development | \$ 920,364,194 | \$ - | \$ 202,136 |
| COVID-19 - FOOD AND DRUG ADMINISTRATION RESEARCH | 93.103 | GEORGE MASON UNIVERSITY | E2062271 | \$ 1,273,808 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,483 |
| COVID-19 - FOOD INSECURITY, NEIGHBORHOOD ENVIRONMENT, AND WEIGHT TRAJECTORIES IN | 93.RD | DREXEL UNIVERSITY | 900211 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 41,187 |
| COVID-19 - HUMAN GENOME RESEARCH | 93.172 | JACKSON LABORATORY | 210368-0224-12 | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,369 |
| COVID-19 - IMPACT OF LOCAL DIFFERENCES IN VACCINE UPTAKE ON SARS-COV-2 EVOLUTION | 93.RD | UNIVERSITY OF WISCONSIN-MADISON | 0000002561 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 67,455 |
| COVID-19 - LUNG DISEASES RESEARCH | 93.838 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | EHR-02-21 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 230,889 |
| COVID-19 - LUNG DISEASES RESEARCH | 93.838 | COLUMBIA UNIVERSITY | 39(GG015997-01) | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 69,618 |
| COVID-19 - LUNG DISEASES RESEARCH | 93.838 | GEORGE WASHINGTON UNIVERSITY | SUB TO 072HL161847 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 291,944 |
| COVID-19 - LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF UTAH | 10063508-11-PENN | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 37,172 |
| COVID-19 - LUNG DISEASES RESEARCH | 93.838 | WESTAT, INC. | 33-312-0217571-66400L | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 773,167 |
| COVID-19 - LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF UTAH | 10063508-11-PENN | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ 59,462 | \$ 1,798,246 |
| COVID-19 - MEDICAL IMAGING AND DATA CONSORTIUM: RAPID RESPONSE TO COVID-19 PANDEM | 93.RD | UNIVERSITY OF CHICAGO | AWD101462-O | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 84,629 |
| COVID-19 - MEDICAL IMAGING AND DATA RESOURCE CENTER (IMDRC) FOR RAPID RESPONSE TO | 93.RD | AMERICAN COLLEGE OF RADIOLOGY IMAGING NETWORK (ACRIN) | 1843 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 100,000 |
| COVID-19 - MEDICAL LIBRARY ASSISTANCE | 93.879 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 1,677,213 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,262 |
| COVID-19 - MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002287 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 255,827 |
| COVID-19 - MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002287 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,016,362 |
| COVID-19 - MEMU MATERNAL MORBIDITY AND MORTALITY DURING THE COVID-19 PANDEMIC | 93.RD | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 231,735 |
| COVID-19 - MINORITY HEALTH AND HEALTH DISPARITIES RESEARCH | 93.307 | GEORGE WASHINGTON UNIVERSITY | 21050 | \$ 4,897,212 | Research and Development | \$ 920,364,194 | \$ 422,533 | \$ 666,085 |
| COVID-19 - NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES | 93.350 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 13,614,024 | Research and Development | \$ 920,364,194 | \$ 12,150 | \$ 282,765 |
| COVID-19 - NATIONAL ORGANIZATIONS OF STATE AND LOCAL OFFICIALS | 93.011 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 392,920 | Research and Development | \$ 920,364,194 | \$ - | \$ 392,920 |
| COVID-19 - NURSING RESEARCH | 93.361 | VISITING NURSE SERVICE OF NEW YORK | 4633_2021_PENN | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 12,855 |
| COVID-19 - NURSING RESEARCH | 93.361 | VISITING NURSE SERVICE OF NEW YORK | 4633_2021_PENN | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 32,375 |
| COVID-19 - PREVENTION OF DISEASE, DISABILITY, AND DEATH BY INFECTIOUS DISEASES | 93.084 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5106229 | \$ 801,624 | Research and Development | \$ 920,364,194 | \$ 181,962 | \$ 776,633 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder | Identifying Number Assigned By Funder Pass-Through | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|--|--|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| COVID-19 - PROTECTING AND IMPROVING HEALTH GLOBALLY: BUILDING AND STRENGTHENING PUBLIC HEALTH IMPACT, SYSTEMS, CAPACITY AND SECURITY | 93.318 | | | \$ 580,125 | Research and Development | \$ 920,364,194 | \$ 91,399 | \$ 580,125 |
| COVID-19 - RAPID AND ULTRA-SENSITIVE SARS-COV-2 ANTIGEN DETECTION FOR ACUTE INFECTION | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,071 |
| COVID-19 - RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | | | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 162,446 |
| COVID-19 - RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | | | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ 5,394 | \$ 401,469 |
| COVID-19 - SECONDARY INFECTIONS AND ANTIBIOTIC RESISTANCE IN POST-ACUTE CARE PATI | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 324,141 |
| COVID-19 - STRENGTHENING PUBLIC HEALTH SYSTEMS AND SERVICES THROUGH NATIONAL PARTNERSHIPS TO IMPROVE AND PROTECT THE NATION'S HEALTH | 93.421 | UNIVERSITY OF VERMONT & STATE AGRICULTURAL COLLEGE | AWD00002885U800000140 | \$ 18,296 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,296 |
| COVID-19 - THE IMPACT OF SARS-COV-2 INFECTION DURING PREGNANCY ON OBSTETRIC AND N | 93.RD | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | 0258-D383-4609 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ (672) |
| COVID-19 - TRANS-NIH RESEARCH SUPPORT | 93.310 | UNIVERSITY OF CALIFORNIA, SANTA BARBARA | sub to R01DK130067 | \$ 12,448,138 | Research and Development | \$ 920,364,194 | \$ - | \$ 164,444 |
| COVID-19 - TRANS-NIH RESEARCH SUPPORT | 93.310 | | | \$ 12,448,138 | Research and Development | \$ 920,364,194 | \$ 125,192 | \$ 531,167 |
| COVID-19 - WHOLE-GENOME SEQUENCING TO DEFINE SARS-COV-2 VARIANT POPULATIONS DURIN | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 37,749 |
| DEVELOPMENT AND EVALUATION OF A CHLORHEXIDINE GLUCONATE BATHING PROTOC | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,244 |
| DEVELOPMENT OF A PROTOTYPE SOFTWARE FOR AUTOMATED PET/CT INTERPRETATIO | 93.RD | QUANTITATIVE RADIOLOGY SOLUTIONS, LLC | SUB TO CA236492 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,261 |
| DHS - RESOURCE & REFERRAL TOOL | 93.778 | PA Department of Health and Human Services | SAP# 4100093500 | \$ 416,047 | Medicaid CLUSTER | \$ 416,047 | \$ - | \$ 200,000 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | ALBERT EINSTEIN COLLEGE OF MEDICINE | 312118 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 71,257 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | BECKMAN RESEARCH INSTITUTE OF THE CITY OF HOPE | 50578.914951.6560 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,124 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | BECKMAN RESEARCH INSTITUTE OF THE CITY OF HOPE | 61294.2006834.669303 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 79,118 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | BROAD INSTITUTE OF MIT AND HARVARD | 5000868-5500001742 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 102,845 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CASE WESTERN RESERVE UNIVERSITY | RES512857 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 290 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CASE WESTERN RESERVE UNIVERSITY | RES516457 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,355 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CASE WESTERN RESERVE UNIVERSITY | RES600195 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 164,407 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 22107-GRT-00000441 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 54,296 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200040820 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 98,735 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200370521 I PO# 962245 - RSUB | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,619 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200400817 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ (98,877) |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200950823-XX | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,122 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201760420 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,598 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3209810625 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 304,061 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3210191223 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 108,735 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001016 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 198,252 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000382 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 55,093 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000596 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ (3,100) |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000685 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 202,386 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001469 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 652,839 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001545 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 180,124 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001565 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 318,907 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002496 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 269,349 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | COLUMBIA UNIVERSITY | 1(GGG011642-03) | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,665 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | COLUMBIA UNIVERSITY | 2(GG015836-01) | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,169 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | CORNELL UNIVERSITY | 203486 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 101,454 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | DUKE UNIVERSITY | A032135 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,555 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | DUKE UNIVERSITY | sub to R01DK118431-04 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,217 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | EMORY UNIVERSITY | T674972 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,709 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | GEORGE WASHINGTON UNIVERSITY | 20-M122 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,891 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | HARVARD PILGRIM HEALTH CARE | PH000668A | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 32,099 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | HARVARD UNIVERSITY | 124358-5123521 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 180,706 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | INDIANA UNIVERSITY | 8689_PENN | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,719 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | INDIANA UNIVERSITY | IN4689868_PENN | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,964 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | JABE CENTER FOR HEALTH RESEARCH | SUB TO R01DK122603 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 166,054 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | JABE CENTER FOR HEALTH RESEARCH | SUB TO R01DK121240 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 48 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | JOHNS HOPKINS UNIVERSITY | 2004016695 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,015 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | JOHNS HOPKINS UNIVERSITY | 2005752237 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,507 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | JOHNS HOPKINS UNIVERSITY | 2005856488 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,738 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | JOSLIN DIABETES CENTER, INC | 100136 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 58,362 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | MASSACHUSETTS GENERAL HOSPITAL | 233274 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,044 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | MD ANDERSON CANCER CENTER | 3001370497 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,733 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | MEDICAL COLLEGE OF WISCONSIN | SUB TO K01DK121866 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,973 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | NEW YORK UNIVERSITY GROSSMAN SCHOOL OF MEDICINE | 22-A0-00-1008570 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,314 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | NORTHERN CALIFORNIA INSTITUTE FOR RESEARCH AND EDUCATION | EST3059-02 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,546 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | PENNSYLVANIA STATE UNIVERSITY | 5821-UP-DHHS-4888 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,814 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | SAINT LOUIS UNIVERSITY | eRS #21446-44249 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ (102,559) |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | SCINTILLON INSTITUTE | 22241-209-415 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 247,463 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | THOMAS JEFFERSON UNIVERSITY | 080-30000-509203 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 152,686 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | TULANE UNIVERSITY | TUL-HSC-556923-18/19 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 57,278 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 10790sc | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 774 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 9644sc | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,709 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF COLORADO | F723.1035.006 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 87 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF FLORIDA | SUB00003301 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 130,956 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF ILLINOIS | 19376 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,241 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF ILLINOIS AT CHICAGO | 16587-00 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 123,547 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF ILLINOIS AT CHICAGO | 17483 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,320 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF ILLINOIS AT CHICAGO | 17647 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,700 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF ILLINOIS AT CHICAGO | 17709 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 973 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MARYLAND, BALTIMORE | 3001055 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,041 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MIAMI | 0500001161 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,766 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MIAMI | SPC-001391 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 41,129 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MICHIGAN | SUBK00010054 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,285 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MICHIGAN | SUBK00010278 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 222,189 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MICHIGAN | SUBK00010724 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,620 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MICHIGAN | SUBK00012114 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,659 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF MINNESOTA | N008442902 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 12,124 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5120534 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 130,073 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5125754 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,327 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL | 5127852 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,049 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF PITTSBURGH | 0062023131994-1 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,838 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF PITTSBURGH | AWD00001317 (133760-01) | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 219,229 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF SOUTHERN CALIFORNIA | 137014491 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 62,604 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER | 201010 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 413,724 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER | GM0220602 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 27,474 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF UTAH | 10055841-30-UPN | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 69,538 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | UNIVERSITY OF WASHINGTON | UWVC14196 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,572 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | VANDERBILT UNIVERSITY | VUMC81957 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 69,254 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMC107315 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,966 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-20-278 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,121 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-21-140 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 134,335 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-22-0064 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,790 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-23-0411 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,633 |
| DIABETES, DIGESTIVE, AND KIDNEY DISEASES EXTRAMURAL RESEARCH | 93.847 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-23-0411 | \$ 63,859,364 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,633 |
| DIETARY SUPPLEMENT RESEARCH PROGRAM | 93.321 | UNIVERSITY OF ARIZONA | 626464 | \$ 48,815 | Research and Development | \$ 920,364,194 | \$ 6,833,751 | \$ 56,078,988 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001531 | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ - | \$ 67,180 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | INDIANA UNIVERSITY | 8165-UP | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,227 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | JOHNS HOPKINS UNIVERSITY | 2005729550 | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ - | \$ 214,366 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | JOHNS HOPKINS UNIVERSITY | 2005741661 | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,830 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | NEW YORK MEDICAL COLLEGE | 124020 | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,867 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | UNIVERSITY OF MIAMI | SPC-000724 | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,764 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | VELLM BIOSCIENCES LLC | SUB TO 1R41E8034141-01 | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ - | \$ 51,574 |
| DISCOVERY AND APPLIED RESEARCH FOR TECHNOLOGICAL INNOVATIONS TO IMPROVE HUMAN HEALTH | 93.286 | VELLM BIOSCIENCES LLC | SUB TO 1R41E8034141-01 | \$ 10,437,390 | Research and Development | \$ 920,364,194 | \$ 688,929 | \$ 10,072,582 |
| DRCR RETINA NETWORK - PROTOCOL AF | 93.RD | JAEB CENTER FOR HEALTH RESEARCH | EY014231 protocol AF | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 86,543 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | COLUMBIA UNIVERSITY | 12(GG015428-03) | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 44,831 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | CORNELL UNIVERSITY | 183469-2 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,771 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | CORNELL UNIVERSITY | 222052-2 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 34,018 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | EMORY UNIVERSITY | A305847 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 49,656 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | EMORY UNIVERSITY | A815245 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,622 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | GEISINGER HEALTH SYSTEM | 626510P01 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ (3,091) |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | GENE CENTRIX, INC. | 19-40-00-1003202 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,927 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | LONG ISLAND UNIVERSITY | 31168 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 30,686 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | NEW YORK UNIVERSITY | 19-40-00-1002274 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,578 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | TEMPLE UNIVERSITY | 268298-UPENN | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,718 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | TEMPLE UNIVERSITY | 269406-UP | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,655 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | UNIVERSITY OF CONNECTICUT | 420072 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,054 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | UNIVERSITY OF FLORIDA | SUB00002214 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 109,896 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | UNIVERSITY OF MICHIGAN | SUBK00010102 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,172 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | UNIVERSITY OF PITTSBURGH | AWD0004830 (137089-4) | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,364 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | UNIVERSITY OF PITTSBURGH | AWD0006300 (13803-15) | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,174 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | UNIVERSITY OF ROCHESTER | 417660G / URFAO:GR510990 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,065 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | UNIVERSITY OF TEXAS AT SAN ANTONIO | 1000004419 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 284,383 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-23-0055 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,541 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | WEILL CORNELL MEDICAL COLLEGE | 222459-10 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,998 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | WEILL CORNELL MEDICAL COLLEGE | 222480-1 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 180,161 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | WEILL CORNELL MEDICAL COLLEGE | 228309-3 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 275,698 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | WEILL CORNELL MEDICAL COLLEGE | P300A040500 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,392 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | WISTAR INSTITUTE | 25621-02-324 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 364,712 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | WISTAR INSTITUTE | 25631-02-324 | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 89,654 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | YALE UNIVERSITY | CON-80002920 (GR111857) | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 176,439 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | YALE UNIVERSITY | CON-80003789 (GR117266) | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,484 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | YALE UNIVERSITY | GR109740 (CON-80002398) | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ - | \$ 415,236 |
| DRUG ABUSE AND ADDICTION RESEARCH PROGRAMS | 93.279 | YALE UNIVERSITY | GR109740 (CON-80002398) | \$ 19,651,307 | Research and Development | \$ 920,364,194 | \$ 2,538,816 | \$ 17,258,808 |
| ENDING THE HIV EPIDEMIC: A PLAN FOR AMERICA | 93.686 | City of Philadelphia (Dept Public Health) | 2120559-02 | \$ 360,982 | N/A | \$ - | \$ - | \$ 247,696 |
| ENDING THE HIV EPIDEMIC: A PLAN FOR AMERICA | 93.686 | City of Philadelphia (Dept Public Health) | 2120559-03 | \$ 360,982 | N/A | \$ - | \$ - | \$ 113,286 |
| ENHANCING TREG THERAPEUTIC EFFICACY IN GVHD | 93.RD | UNIVERSITY OF MINNESOTA | N009559104 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,677 |
| ENVIRONMENTAL HEALTH | 93.113 | BROWN UNIVERSITY | 00002112 | \$ 5,387,235 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,316 |
| ENVIRONMENTAL HEALTH | 93.113 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002160 | \$ 5,387,235 | Research and Development | \$ 920,364,194 | \$ - | \$ 51,592 |
| ENVIRONMENTAL HEALTH | 93.113 | JOHNS HOPKINS UNIVERSITY | 2005397363 | \$ 5,387,235 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,495 |
| ENVIRONMENTAL HEALTH | 93.113 | RUTGERS UNIVERSITY | 1388 | \$ 5,387,235 | Research and Development | \$ 920,364,194 | \$ - | \$ 111,656 |
| ENVIRONMENTAL HEALTH | 93.113 | RUTGERS UNIVERSITY | SUB00002625 | \$ 5,387,235 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,377 |
| ENVIRONMENTAL HEALTH | 93.113 | UNIVERSITY OF CINCINNATI | 014646-00002 | \$ 5,387,235 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,437 |
| ENVIRONMENTAL HEALTH | 93.113 | UNIVERSITY OF CINCINNATI | 014646-00002 | \$ 5,387,235 | Research and Development | \$ 920,364,194 | \$ 724,851 | \$ 5,156,362 |
| EVIDENCE-BASED PRACTICE CENTERS - AHRQ EPC VI IDIQ CONTRACT | 93.RD | ECRI | SUB TO 75080120D00002 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 277,988 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | ALBERT EINSTEIN HEALTHCARE NETWORK | 4965UPenn | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,175 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | ASTROCYTE PHARMACEUTICALS, INC. | SUB TO 1R41NS093756 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ (1) |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | AXONOVA MEDICAL, LLC | SUB TO R43-NS125892 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 83,015 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | AXONOVA MEDICAL, LLC | SUB TO R44NS108869 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 524,731 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
 SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
 Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|---|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201310623 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,279 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201590324 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 211,194 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201620321 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ (10,531) |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201870620 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,582 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3202306323-XX | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 102,732 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000086 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 97,853 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000131 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 113,865 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002080 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 116,175 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002332 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,967 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002351 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 72,470 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00003060 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,447 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER | 400868 / OS00000655 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,868 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CLEVELAND CLINIC | 1428-SUB | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 160,959 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CLEVELAND CLINIC | CCF22864256 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,054 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | CLEVELAND CLINIC FOUNDATION | 718-SUB | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ (14,501) |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | COLUMBIA UNIVERSITY | 4(GG012911-04) | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,753 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | DUKE UNIVERSITY | A033658 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 315,526 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | DUQUESNE UNIVERSITY | G2300028 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,955 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | EMORY UNIVERSITY | A748940 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 119,059 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | HARVARD MEDICAL SCHOOL | 150610.5118435.0002 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 37,084 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | JOHNS HOPKINS UNIVERSITY | 2005632177 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 324,932 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | JOHNS HOPKINS UNIVERSITY | 2005680182 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 86,200 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MASSACHUSETTS GENERAL HOSPITAL | 235400 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 170,053 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MASSACHUSETTS GENERAL HOSPITAL | 236574 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 122,539 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MASSACHUSETTS GENERAL HOSPITAL | 238744 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 109,250 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MASSACHUSETTS GENERAL HOSPITAL | SUB TO 072NS122680 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,057 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MASSACHUSETTS GENERAL HOSPITAL | SUB TO U01NS095388 / NN108 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,190 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MAYO CLINIC JACKSONVILLE | SUB TO 5-U01NS080168-02 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,469 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MAYO CLINIC JACKSONVILLE | THE-232483 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ (1,104) |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MAYO CLINIC ROCHESTER | THE-214838-04 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ (22,678) |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | MICHIGAN STATE UNIVERSITY | RC107677UP | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ (1,735) |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | NEW YORK UNIVERSITY GROSSMAN SCHOOL OF MEDICINE | 22-A1-00-1006538 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 23,283 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | NORTHWESTERN UNIVERSITY | 60054977 PENN | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,862 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | OHIO STATE UNIVERSITY | SPC-1000011315 GR129656 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 313,946 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | PENNSYLVANIA STATE UNIVERSITY | S001280-DH05 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 57,377 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | RUSH UNIVERSITY | 20121005-Sub06 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 49,276 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | SECOND SIGHT MEDICAL PRODUCTS, INC. | sub to 5UH3NS103442-02 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 82,530 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | STANFORD UNIVERSITY | 62996534-1393654 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,175 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | THOMAS JEFFERSON UNIVERSITY | 4970 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,393 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | TUFTS MEDICAL CENTER | 5017157-SERV | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 48,358 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF ALABAMA AT BIRMINGHAM | 000510297-006 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,016 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF ALABAMA AT BIRMINGHAM | 000523825-SC001 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,552 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CALIFORNIA, DAVIS | A21-1324-5015 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 153,475 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 2000 G VK 398 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,884 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 2000 G ZD099 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,980 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CALIFORNIA, LOS ANGELES | 2301 G WE215 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 92,507 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CINCINNATI | 010785-135731 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 47,447 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CINCINNATI | 011266-135731 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,226 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CINCINNATI | 011337-135731 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,515 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CINCINNATI | 012043-135731 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,609 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF CINCINNATI | 012340-135731 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,141 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF COLORADO DENVER | FY19.996.001 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,920 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF IOWA | 501108-01 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 158,588 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF MARYLAND | 1802532 Request: 4768 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 93,007 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF MELBOURNE | TP 836585-UPenn | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,686 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF MIAMI | spc-00091 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,716 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF MIAMI | SPC-001451 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 113,415 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF MICHIGAN | SUBK00007465 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 197,946 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF MICHIGAN | SUBK00009898 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 48,023 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF NEBRASKA | 34-5250-2030-001 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 39,868 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF NEBRASKA | 34-5385-2100-002 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 449,092 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF PITTSBURGH | AWD00002964 (135356-1) | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 52 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF QUEENSLAND | RM2019002969 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,400 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF ROCHESTER | 14175846/UR FAQ R10929 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 94,855 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF SOUTHERN CALIFORNIA | SC0N-0002526 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,785 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER | GMO 181204 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,632 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | VANDERBILT UNIVERSITY | OSA00000110 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 96,948 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-22-0340 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 11,740 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-23-0466 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 81,040 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | WAYNE STATE UNIVERSITY | WSU21088 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 165,907 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | WEILL CORNELL MEDICAL COLLEGE | 214405 | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,829 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | YALE UNIVERSITY | GR110765 (CON-80002733) | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,660 |
| EXTRAMURAL RESEARCH PROGRAMS IN THE NEUROSCIENCES AND NEUROLOGICAL DISORDERS | 93.853 | | | \$ 56,771,820 | Research and Development | \$ 920,364,194 | \$ 8,126,296 | \$ 51,131,089 |
| FAMILY PLANNING SERVICES | 93.217 | Family Health Council of Central PA | FHPAD36160 | \$ 72,000 | N/A | \$ - | \$ - | \$ 72,000 |
| FAMILY SMOKING PREVENTION AND TOBACCO CONTROL ACT REGULATORY RESEARCH | 93.077 | RUTGERS UNIVERSITY | SUB00002392 | \$ 5,987,081 | Research and Development | \$ 920,364,194 | \$ - | \$ 251,432 |
| FAMILY SMOKING PREVENTION AND TOBACCO CONTROL ACT REGULATORY RESEARCH | 93.077 | UNIVERSITY OF NEVADA, RENO | UNR-22-39 | \$ 5,987,081 | Research and Development | \$ 920,364,194 | \$ - | \$ 174,219 |
| FAMILY SMOKING PREVENTION AND TOBACCO CONTROL ACT REGULATORY RESEARCH | 93.077 | WAKE FOREST UNIVERSITY | WFUHS 119379 | \$ 5,987,081 | Research and Development | \$ 920,364,194 | \$ - | \$ 60,678 |
| FAMILY SMOKING PREVENTION AND TOBACCO CONTROL ACT REGULATORY RESEARCH | 93.077 | | | \$ 5,987,081 | Research and Development | \$ 920,364,194 | \$ 2,037,179 | \$ 5,500,752 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---|--------------------|---|---|-----------------------|------------------------------|----------------|----------------------------|----------------------|
| FOOD AND DRUG ADMINISTRATION, RESEARCH | 93.103 | BRIGHAM AND WOMEN'S HOSPITAL | 124939 | \$ 1,273,808 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,206 |
| FOOD AND DRUG ADMINISTRATION, RESEARCH | 93.103 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | FP23616_SUB01_01 | \$ 1,273,808 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,344 |
| FOOD AND DRUG ADMINISTRATION, RESEARCH | 93.103 | UNIVERSITY OF PITTSBURGH | AWD0002855 (135105-3) | \$ 1,273,808 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,542 |
| FOOD AND DRUG ADMINISTRATION, RESEARCH | 93.103 | | | \$ 1,273,808 | Research and Development | \$ 920,364,194 | \$ 255,799 | \$ 989,097 |
| FY23 SAMHSA-PERC FEP | 93.113 | CITY OF PHILADELPHIA | 2120266 | \$ 135,531 | N/A | \$ - | \$ - | \$ 135,531 |
| GRANTS FOR PRIMARY CARE TRAINING AND ENHANCEMENT | 93.884 | | | \$ 848,183 | Research and Development | \$ 920,364,194 | \$ - | \$ 848,183 |
| GRANTS TO PROVIDE OUTPATIENT EARLY INTERVENTION SERVICES WITH RESPECT TO HIV DISEASE | 93.918 | City of Philadelphia (Dept Public Health) | 2220192-01 | \$ 105,301 | N/A | \$ - | \$ - | \$ 75,000 |
| GRANTS TO PROVIDE OUTPATIENT EARLY INTERVENTION SERVICES WITH RESPECT TO HIV DISEASE | 93.918 | DREXEL UNIVERSITY | 800100 | \$ 105,301 | N/A | \$ - | \$ - | \$ 30,301 |
| HEALTH PROFESSIONS STUDENT LOANS, INCLUDING PRIMARY CARE LOANS/LOANS FOR DISADVANTAGED STUDENTS | 93.342 | | | \$ 17,374,886 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 2,722,008 |
| HEALTH SYSTEMS STRENGTHENING AND HIV/AIDS PREVENTION, CARE AND TREATMENT UNDER THE PRESIDENT'S EMERGENCY PLAN FOR AIDS RELIEF | 93.266 | UNIVERSITY OF BOTSWANA | 555958 | \$ (1,727) | Research and Development | \$ 920,364,194 | \$ - | \$ (1,727) |
| HIV EMERGENCY RELIEF PROJECT GRANTS | 93.914 | CITY OF PHILADELPHIA | 2120588-01 | \$ 1,365,096 | N/A | \$ - | \$ - | \$ 208,358 |
| HIV EMERGENCY RELIEF PROJECT GRANTS | 93.914 | CITY OF PHILADELPHIA | 2120588-02 | \$ 1,365,096 | N/A | \$ - | \$ - | \$ 89,803 |
| HIV EMERGENCY RELIEF PROJECT GRANTS | 93.914 | City of Philadelphia (Dept Public Health) | 2120575-01 | \$ 1,365,096 | N/A | \$ - | \$ - | \$ 30,712 |
| HIV EMERGENCY RELIEF PROJECT GRANTS | 93.914 | City of Philadelphia (Dept Public Health) | 2120578-01 | \$ 1,365,096 | N/A | \$ - | \$ - | \$ 407,153 |
| HIV EMERGENCY RELIEF PROJECT GRANTS | 93.914 | City of Philadelphia (Dept Public Health) | 2120578-02 | \$ 1,365,096 | N/A | \$ - | \$ - | \$ 187,333 |
| HIV EMERGENCY RELIEF PROJECT GRANTS | 93.914 | City of Philadelphia (Dept Public Health) | 2120589-01 | \$ 1,365,096 | N/A | \$ - | \$ - | \$ 294,280 |
| HIV EMERGENCY RELIEF PROJECT GRANTS | 93.914 | City of Philadelphia (Dept Public Health) | 2120589-02 | \$ 1,365,096 | N/A | \$ - | \$ - | \$ 148,177 |
| HIV PREVENTION ACTIVITIES, HEALTH DEPARTMENT BASED | 93.940 | City of Philadelphia (Dept Public Health) | 2220480-00 | \$ 282,557 | N/A | \$ - | \$ - | \$ 30,062 |
| HIV PREVENTION ACTIVITIES, HEALTH DEPARTMENT BASED | 93.940 | City of Philadelphia (Dept Public Health) | 2220480-01 | \$ 282,557 | N/A | \$ - | \$ - | \$ 174,930 |
| HIV PREVENTION ACTIVITIES, HEALTH DEPARTMENT BASED | 93.940 | City of Philadelphia (Dept Public Health) | 2220528-00 | \$ 282,557 | N/A | \$ - | \$ - | \$ 40,585 |
| HIV PREVENTION ACTIVITIES, HEALTH DEPARTMENT BASED | 93.940 | City of Philadelphia (Dept Public Health) | 2220528-01 | \$ 282,557 | N/A | \$ - | \$ - | \$ 36,980 |
| HIV PREVENTION AND CARE PROJECT: INTERSECTIONAL STIGMA REDUCTION INTER | 93.RD | UNIVERSITY OF PITTSBURGH | AWD00005202 (A18594-1) | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,003 |
| HPV POINT OF CARE MOLECULAR DIAGNOSTICS FOR LMICS | 93.RD | PHOENIX BIOSCIENCE, INC. | SUB TO 75N9102C00058 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 61,884 |
| HUMAN GENOME RESEARCH | 93.172 | CASE WESTERN RESERVE UNIVERSITY | RES516307 | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,406 |
| HUMAN GENOME RESEARCH | 93.172 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-0001464 | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 46,405 |
| HUMAN GENOME RESEARCH | 93.172 | COLUMBIA UNIVERSITY | 1(GG018297-02) | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 240,537 |
| HUMAN GENOME RESEARCH | 93.172 | GEISINGER HEALTH SYSTEM | 646017UP | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,415 |
| HUMAN GENOME RESEARCH | 93.172 | JACKSON LABORATORY | 210368-0224-14 | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 169 |
| HUMAN GENOME RESEARCH | 93.172 | NEW YORK UNIVERSITY GROSSMAN SCHOOL OF MEDICINE | 22-A0-00-1008769 | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,294 |
| HUMAN GENOME RESEARCH | 93.172 | STANFORD UNIVERSITY | R01 HG010476 62166731-137013 | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 61,894 |
| HUMAN GENOME RESEARCH | 93.172 | UNIVERSITY OF CHICAGO | AWD102193 (SUB00000515) | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 91,056 |
| HUMAN GENOME RESEARCH | 93.172 | UNIVERSITY OF COLORADO | FY22.1124.0004 | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ - | \$ 176,271 |
| HUMAN GENOME RESEARCH | 93.172 | | | \$ 9,536,195 | Research and Development | \$ 920,364,194 | \$ 1,164,061 | \$ 8,820,379 |
| HYPERTROPHIC CARDIOMYOPATHY: UNDERSTANDING THE HETEROGENEITY OF DISEAS | 93.RD | BRIGHAM AND WOMEN'S HOSPITAL | 2020A015252 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 94,477 |
| INHALATION TOXICOLOGY OF CHLORINE GAS ON-A-CHIP | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ 152,958 | \$ 1,686,793 |
| INJURY PREVENTION AND CONTROL RESEARCH AND STATE AND COMMUNITY BASED PROGRAMS | 93.136 | UNIVERSITY OF MICHIGAN | SUBK00013120 | \$ 2,299,921 | Research and Development | \$ 920,364,194 | \$ - | \$ 165,426 |
| INJURY PREVENTION AND CONTROL RESEARCH AND STATE AND COMMUNITY BASED PROGRAMS | 93.136 | | | \$ 2,299,921 | Research and Development | \$ 920,364,194 | \$ 80,216 | \$ 2,124,495 |
| INNOVATIVE STATE AND LOCAL PUBLIC HEALTH STRATEGIES TO PREVENT AND MANAGE DIABETES AND HEART DISEASE AND STROKE- | 93.435 | CITY OF PHILADELPHIA | 2020657 | \$ 196,961 | Research and Development | \$ 920,364,194 | \$ - | \$ 196,961 |
| INSTRUCTOR LED TRAINING ON PHARMACOEPIDEMIOLOGY | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 167,071 |
| INTEGRATED INFORMATICS RESOURCES FOR EKARYOTIC MICROBIAL PATHOGENS AN | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ 2,238,049 | \$ 5,736,718 |
| INTERNATIONAL RESEARCH AND RESEARCH TRAINING | 93.989 | COLUMBIA UNIVERSITY | 1(GG018305-01) | \$ 475,216 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,875 |
| INTERNATIONAL RESEARCH AND RESEARCH TRAINING | 93.989 | NEW YORK UNIVERSITY | F2098-01 | \$ 475,216 | Research and Development | \$ 920,364,194 | \$ - | \$ 32,466 |
| INTERNATIONAL RESEARCH AND RESEARCH TRAINING | 93.989 | RESEARCH FOUNDATION FOR MENTAL HYGIENE, INC. | 149265 | \$ 475,216 | Research and Development | \$ 920,364,194 | \$ - | \$ 12,965 |
| INTERNATIONAL RESEARCH AND RESEARCH TRAINING | 93.989 | | | \$ 475,216 | Research and Development | \$ 920,364,194 | \$ 74,798 | \$ 421,910 |
| IPA ASSIGNMENT AGREEMENT | 93.U02 | | | \$ 39,874 | N/A | \$ - | \$ - | \$ 39,874 |
| LUNG DISEASES RESEARCH | 93.838 | BIOSPUNNIK LLC | SUB TO 1R41HL156767 - 01A1 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,167 |
| LUNG DISEASES RESEARCH | 93.838 | BOSTON UNIVERSITY | 4500003055 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,793 |
| LUNG DISEASES RESEARCH | 93.838 | BRIGHAM AND WOMEN'S HOSPITAL | 122805 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 91,350 |
| LUNG DISEASES RESEARCH | 93.838 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3200850618 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 146,589 |
| LUNG DISEASES RESEARCH | 93.838 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201040419 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 92,610 |
| LUNG DISEASES RESEARCH | 93.838 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-0000383 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,894 |
| LUNG DISEASES RESEARCH | 93.838 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-0000816 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 81,612 |
| LUNG DISEASES RESEARCH | 93.838 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001474 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 353,665 |
| LUNG DISEASES RESEARCH | 93.838 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001520 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,942 |
| LUNG DISEASES RESEARCH | 93.838 | CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER | 137990 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 353,303 |
| LUNG DISEASES RESEARCH | 93.838 | CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER | OS00000426/311013 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,625 |
| LUNG DISEASES RESEARCH | 93.838 | DUKE UNIVERSITY | 303001091 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,537 |
| LUNG DISEASES RESEARCH | 93.838 | DUKE UNIVERSITY | 303001243 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 332,383 |
| LUNG DISEASES RESEARCH | 93.838 | LIGNAMED | Sub to R44HL140680 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 64,895 |
| LUNG DISEASES RESEARCH | 93.838 | PEROXITECH, LLC | SUB TO R41HL164161 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 177,141 |
| LUNG DISEASES RESEARCH | 93.838 | THOMAS JEFFERSON UNIVERSITY | 080-18007-533801 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 157,789 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF CALIFORNIA, DAVIS | A21-2099-5001 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 59,792 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF CALIFORNIA, IRVINE | 2023-1915 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,574 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 13732sc | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 66,607 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 14205sc | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 45,199 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF COLORADO | FY22.576.002 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,830 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF FLORIDA | SUB00002761 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ (231) |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF MIAMI | OS00001179 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 28,371 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF MICHIGAN | SUBK00010624 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,830 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF MICHIGAN | SUBK00012073 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,882 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF VIRGINIA | GB11023.169673 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 427,671 |
| LUNG DISEASES RESEARCH | 93.838 | UNIVERSITY OF WASHINGTON | UWSC14034 | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 175,976 |
| LUNG DISEASES RESEARCH | 93.838 | YALE UNIVERSITY | CON-80003373 (GR113907) | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,989 |
| LUNG DISEASES RESEARCH | 93.838 | | | \$ 29,514,396 | Research and Development | \$ 920,364,194 | \$ 2,930,517 | \$ 23,315,575 |
| MAINTENANCE OF THE INNOVATION CENTER (IC) | 93.RD | HARVARD PILGRIM HEALTH CARE | SUB TO 75F40119D10037 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 54,235 |
| MASTER PLAN FOR INTEGRATION OF INNOVATION TECHNOLOGIES AND IC | 93.RD | HARVARD PILGRIM HEALTH CARE | SUB TO 75F40119D10037 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,363 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|--|--------------------|--|---|-----------------------|--------------------------|----------------|----------------------------|----------------------|
| MATERNAL AND CHILD HEALTH FEDERAL CONSOLIDATED PROGRAMS | 93.110 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201890820 | \$ 116,237 | N/A | \$ - | \$ - | \$ 39,140 |
| MATERNAL AND CHILD HEALTH FEDERAL CONSOLIDATED PROGRAMS | 93.110 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3204510622 | \$ 116,237 | N/A | \$ - | \$ - | \$ 11,607 |
| MATERNAL AND CHILD HEALTH FEDERAL CONSOLIDATED PROGRAMS | 93.110 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 320961-06-01 | \$ 116,237 | N/A | \$ - | \$ - | \$ 12,437 |
| MATERNAL AND CHILD HEALTH FEDERAL CONSOLIDATED PROGRAMS | 93.110 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3258990618 | \$ 116,237 | N/A | \$ - | \$ - | \$ 9,949 |
| MATERNAL AND CHILD HEALTH FEDERAL CONSOLIDATED PROGRAMS | 93.110 | HHT FOUNDATION INTERNATIONAL, INC. | SUB TO UP4M46404-01-00 | \$ 116,237 | N/A | \$ - | \$ - | \$ 17,636 |
| MATERNAL AND CHILD HEALTH FEDERAL CONSOLIDATED PROGRAMS | 93.110 | LEHIGH VALLEY HEALTH NETWORK | HRS6A_22_23_011 | \$ 116,237 | N/A | \$ - | \$ - | \$ 25,468 |
| MATERNAL AND CHILD HEALTH SERVICES BLOCK GRANT TO THE STATES | 93.994 | PA Department of Health and Human Services | 410089359 | \$ 773,729 | N/A | \$ - | \$ - | \$ 300,000 |
| MATERNAL AND CHILD HEALTH SERVICES BLOCK GRANT TO THE STATES | 93.994 | Pennsylvania Department of Health | 410085550 | \$ 773,729 | N/A | \$ - | \$ 83,712 | \$ 298,729 |
| MATERNAL AND CHILD HEALTH SERVICES BLOCK GRANT TO THE STATES | 93.994 | Pennsylvania Department of Health | SAP# 410080264 | \$ 773,729 | N/A | \$ - | \$ - | \$ 175,000 |
| MECHANICAL DEVICE FOR THE PREVENTION OF VTE IN HIGH RISK PATIENT POPUL | 93.RD | OSCFLEX, LLC | SUB TO 2R44H145860 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 89,548 |
| MEDICAL ASSISTANCE PROGRAM | 93.778 | CITY OF PHILADELPHIA (DBHDS) | 2112440-02 | \$ 416,047 | Medicaid CLUSTER | \$ 416,047 | \$ - | \$ 175,871 |
| MEDICAL ASSISTANCE PROGRAM | 93.778 | COMMONWEALTH OF PENNSYLVANIA | 4300763862 | \$ 416,047 | Medicaid CLUSTER | \$ 416,047 | \$ - | \$ 40,176 |
| MEDICAL LIBRARY ASSISTANCE | 93.879 | | | \$ 1,677,213 | Research and Development | \$ 920,364,194 | \$ 290,778 | \$ 1,674,951 |
| MENTAL AND BEHAVIORAL HEALTH EDUCATION AND TRAINING GRANTS | 93.732 | | | \$ 300,990 | Research and Development | \$ 920,364,194 | \$ - | \$ 300,990 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | ADVANCED MEDICAL ELECTRONICS | IAME22-0CDRing1-02 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,302 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | ALLEN INSTITUTE FOR BRAIN SCIENCE | 2017-0567 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 294,182 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | ALLEN INSTITUTE FOR BRAIN SCIENCE | 2022-0628 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 144,380 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | ARIZONA STATE UNIVERSITY | 18-285 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,313 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | BOISE STATE UNIVERSITY | 8424-PO133997 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 25,031 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | BOISE STATE UNIVERSITY | 9445-PO138437 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 87,053 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | BOSTON CHILDREN'S HOSPITAL | GENFD0002271757 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,971 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | BOSTON UNIVERSITY | 4500004271 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 112,345 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201571123 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,937 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201740321-51 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 80,452 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3210640821 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,566 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 950480SUB | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 46 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-0000301 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ (238) |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001093 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 71,360 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001135 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ (92) |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002364 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 51,133 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002437 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,884 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002459 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 81,848 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002937 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,810 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | COLUMBIA UNIVERSITY | 1(GG04372-01) | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 243,296 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | COLUMBIA UNIVERSITY | 3(GG017014-01) | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,001 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | DESMOND TUTU HEALTH FOUNDATION | NH-UJUPenn01 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 91,234 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | DREXEL UNIVERSITY | 800172 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 47,131 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | DREXEL UNIVERSITY | 800172 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 47,131 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | DURKE UNIVERSITY | A035002 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,490 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | EMORY UNIVERSITY | A051228 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,967 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | FLORIDA STATE UNIVERSITY | R00003090 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 105,621 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | LYSSNIO, INC | 128101-PENN01 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 297,214 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | MICHIGAN STATE UNIVERSITY | RC112111B | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,450 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | NEW YORK UNIVERSITY GROSSMAN SCHOOL OF MEDICINE | 19-40-00-1003623 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 362,515 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | NORTHWESTERN UNIVERSITY | 60047194 UP | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,552 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | NORTHWESTERN UNIVERSITY | 60063460 UPENN | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,621 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | NOUS IMAGING, INC. | R44MH121276_Sub3 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,372 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | NOUS IMAGING, INC. | R44MH124567_Sub3 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 83,573 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | PALO ALTO VETERANS INSTITUTE FOR RESEARCH | W150003-05 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ (13,132) |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | PENNSYLVANIA STATE UNIVERSITY | UPENNMMH124605 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 53,580 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | RESEARCH FOUNDATION FOR THE STATE UNIVERSITY OF NEW YORK | 90077/2/1165626 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 55,937 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | RESEARCH TRIANGLE INSTITUTE | 3-312-0218622-67037L | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,341 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | RUTGERS UNIVERSITY | 1962 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 270,942 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | SEATTLE CHILDREN'S HOSPITAL RESEARCH INSTITUTE | 12584SUB | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 88,816 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | STANFORD UNIVERSITY | 62723868-144480 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 40,018 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | STANFORD UNIVERSITY | 62804801-217258 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 58,253 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | TEMPLE UNIVERSITY | 260864-Penn | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 14,521 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | THOMAS JEFFERSON UNIVERSITY | 080-19250-S36601 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,159 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | TULANE UNIVERSITY | TUL-HSC-560958-22/23 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 2,240 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF ALABAMA AT BIRMINGHAM | 000518108-003 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 17,824 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF CALIFORNIA, BERKELEY | 00011195 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 384,038 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF CALIFORNIA, SAN DIEGO | 118744601 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,567 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 11696sc | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 86,269 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 13421sc | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,599 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF FLORIDA | SUB00002369 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ (26,911) |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF MARYLAND | 3001271 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 223,020 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF MINNESOTA | P008726301 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 329,193 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF WASHINGTON | UWSC10949 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 33,816 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | UNIVERSITY OF WASHINGTON | UWSC11446 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,450 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | VALA SCIENCES, INC. | SUB TO R44MH119621 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 255,014 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | VANDERBILT UNIVERSITY | VUHC6627 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,392 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-20-422 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 44,290 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-23-0292 | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 38,550 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | YALE UNIVERSITY | GR107872 (CON-80002099) | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 486,812 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | YALE UNIVERSITY | GR110979 (CON-80002775) | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 556,059 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | YALE UNIVERSITY | GR111808 (CON-80002838) | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,581 |
| MENTAL HEALTH RESEARCH GRANTS | 93.242 | | | \$ 43,498,026 | Research and Development | \$ 920,364,194 | \$ 4,647,319 | \$ 36,340,319 |
| MINORITY HEALTH AND HEALTH DISPARITIES RESEARCH | 93.307 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201001122 | \$ 4,897,212 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,053 |
| MINORITY HEALTH AND HEALTH DISPARITIES RESEARCH | 93.307 | MASSACHUSETTS GENERAL HOSPITAL | SUB TO R01MD014023 | \$ 4,897,212 | Research and Development | \$ 920,364,194 | \$ - | \$ 187,824 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through Entity | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---|--------------------|--|---|-----------------------|------------------------------|----------------|----------------------------|----------------------|
| MINORITY HEALTH AND HEALTH DISPARITIES RESEARCH | 93.307 | UNIVERSITY OF OKLAHOMA | 2023-37 | \$ 4,897,212 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,907 |
| MINORITY HEALTH AND HEALTH DISPARITIES RESEARCH | 93.307 | | | \$ 4,897,212 | Research and Development | \$ 920,364,194 | \$ 1,081,167 | \$ 3,996,343 |
| NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES | 93.350 | UNIVERSITY OF PITTSBURGH | AWD00001775 (134056-1) | \$ 13,614,024 | Research and Development | \$ 920,364,194 | \$ - | \$ 4,320 |
| NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES | 93.350 | UNIVERSITY OF WISCONSIN-MADISON | 0000000859 | \$ 13,614,024 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,522 |
| NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES | 93.350 | UNIVERSITY OF WISCONSIN-MADISON | 0000002355 | \$ 13,614,024 | Research and Development | \$ 920,364,194 | \$ - | \$ 68,157 |
| NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES | 93.350 | UNIVERSITY OF WISCONSIN-MADISON | 0000002357 | \$ 13,614,024 | Research and Development | \$ 920,364,194 | \$ - | \$ 74,674 |
| NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES | 93.350 | VIRGINIA COMMONWEALTH UNIVERSITY | FP00016405_SA001 | \$ 13,614,024 | Research and Development | \$ 920,364,194 | \$ - | \$ 34,874 |
| NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES | 93.350 | | | \$ 13,614,024 | Research and Development | \$ 920,364,194 | \$ 3,023,506 | \$ 13,141,712 |
| NATIONAL CENTER ON SLEEP DISORDERS RESEARCH | 93.233 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201930820 | \$ 4,608,051 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,088 |
| NATIONAL CENTER ON SLEEP DISORDERS RESEARCH | 93.233 | UNIVERSITY OF NEVADA, LAS VEGAS | GR09951 | \$ 4,608,051 | Research and Development | \$ 920,364,194 | \$ - | \$ 16,580 |
| NATIONAL CENTER ON SLEEP DISORDERS RESEARCH | 93.233 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMC98170 | \$ 4,608,051 | Research and Development | \$ 920,364,194 | \$ - | \$ 64,553 |
| NATIONAL CENTER ON SLEEP DISORDERS RESEARCH | 93.233 | | | \$ 4,608,051 | Research and Development | \$ 920,364,194 | \$ 1,337,013 | \$ 4,508,830 |
| NATIONAL RESEARCH SERVICE AWARD IN PRIMARY CARE MEDICINE | 93.186 | | | \$ 89,146 | Research and Development | \$ 920,364,194 | \$ - | \$ 89,146 |
| NATIONAL RESEARCH SERVICE AWARDS_HEALTH SERVICES RESEARCH TRAINING | 93.225 | | | \$ 532,914 | Research and Development | \$ 920,364,194 | \$ - | \$ 532,914 |
| NIAD CENTERS OF EXCELLENCE FOR INFLUENZA RESEARCH AND RESPONSE | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ 5,126,479 | \$ 8,060,851 |
| NUCLEOSIDE-MODIFIED MRNA VACCINATION TO INDUCE HEMAGGLUTININ STALK-SP | 93.RD | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | 75N93019C00051 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,487 |
| NURSING RESEARCH | 93.361 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201511123 | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 22,114 |
| NURSING RESEARCH | 93.361 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00001491 | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,179 |
| NURSING RESEARCH | 93.361 | COLUMBIA UNIVERSITY | 2(GG04705-01) | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ (583) |
| NURSING RESEARCH | 93.361 | UNIVERSITY OF COLORADO | FY23.1160.001 | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,282 |
| NURSING RESEARCH | 93.361 | UNIVERSITY OF COLORADO DENVER | FY18.105.016 | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 34,441 |
| NURSING RESEARCH | 93.361 | UNIVERSITY OF PITTSBURGH | AW00004755 (136886-1) | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,548 |
| NURSING RESEARCH | 93.361 | VILLANOVA UNIVERSITY | 530079UPenn | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,131 |
| NURSING RESEARCH | 93.361 | VISITING NURSE SERVICE OF NEW YORK | 4633_2021_PENN | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,035 |
| NURSING RESEARCH | 93.361 | | | \$ 8,241,227 | Research and Development | \$ 920,364,194 | \$ 1,103,779 | \$ 8,059,850 |
| NURSING STUDENT LOAN GRADUATE OUTSTANDING NEW LOANS ISSUED DURING 2022 | 93.364 | | | \$ 4,148,414 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 27,158 |
| OCCUPATIONAL AND EMERGENCY MEDICINE CONTENT DEVELOPMENT AND TECHNICAL | 93.U01 | | | \$ 6,257 | N/A | \$ - | \$ - | \$ 6,257 |
| OCCUPATIONAL SAFETY AND HEALTH PROGRAM | 93.262 | | | \$ 124,773 | Research and Development | \$ 920,364,194 | \$ - | \$ 124,773 |
| OPIOID STR | 93.788 | Pennsylvania Commission on Crime & Delinquency | 2018-CO-01-30255 | \$ 402,388 | N/A | \$ - | \$ - | \$ (56,387) |
| OPIOID STR | 93.788 | Pennsylvania Commission on Crime & Delinquency | 2021-OG-OM-35967 | \$ 402,388 | N/A | \$ - | \$ - | \$ 185,316 |
| OPIOID STR | 93.788 | Pennsylvania Commission on Crime & Delinquency | 2022-OG-OM-35967-2 | \$ 402,388 | N/A | \$ - | \$ - | \$ 115,409 |
| OPIOID STR | 93.788 | Pennsylvania Department of Health | 4400025124 | \$ 402,388 | N/A | \$ - | \$ 10,203 | \$ 53,124 |
| OPIOID STR | 93.788 | Pennsylvania Department of Health | SAP# 410089429 | \$ 402,388 | N/A | \$ - | \$ - | \$ 104,926 |
| OPTION 23: MULTIVALENT INFLUENZA MRNA VACCINES | 93.RD | DUKE UNIVERSITY | A035673 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 219,808 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | ADA SCIENCE AND RESEARCH INSTITUTE, LLC | LC005412 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,799 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | CAROLINAS HEALTH CARE SYSTEM | 13-01455 (3000300177) | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,138 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00002376 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,313 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | DREXEL UNIVERSITY | 80001 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 15,791 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | GEORGETOWN UNIVERSITY | 425442_GR0251_UPenn | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 137,787 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | LANKENAU INSTITUTE FOR MEDICAL RESEARCH | 06297-0793 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 57,729 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | LOUISIANA STATE UNIVERSITY | SOD-20-136-002 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 71,680 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | MS TECHNOLOGIES CORP. | 301.0003.05 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 41,469 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | NEW YORK UNIVERSITY | F0671-01 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 59,381 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | NEW YORK UNIVERSITY | F1433-01 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,800 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | TEXAS A&M UNIVERSITY | M2101600 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ (2,171) |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | UNIVERSITY OF ROCHESTER | SUB00000528/UR FAO GR532295 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,459 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | UNIVERSITY OF ROCHESTER MEDICAL CENTER | 417864-G / UR FAO GR511139 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 109,911 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | VIRGINIA COMMONWEALTH UNIVERSITY | FP00010440_SA002 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,065 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | VIRTUALLY BETTER, INC. | SUB TO 1R42DE030040 | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,295 |
| ORAL DISEASES AND DISORDERS RESEARCH | 93.121 | | | \$ 10,254,673 | Research and Development | \$ 920,364,194 | \$ 876,075 | \$ 9,701,227 |
| OVERDOSE FATALITY REVIEW | 93.136 | Pennsylvania Department of Health | N/A | \$ 2,299,921 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,000 |
| PHARMACOLOGICAL TARGETING OF GALPHA SUBUNITS IN DISEASE | 93.RD | WASHINGTON UNIVERSITY IN ST. LOUIS | SUB TO 2R01GM124093-05 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 38,694 |
| PK AND SAFETY OF COMMONLY USED DRUGS IN LACTATING WOMEN AND BREASTFD | 93.RD | DUKE UNIVERSITY | TO51 / SUB TO HHSN-275201000031 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 59,475 |
| POPULATION HEALTH RESEARCH SUPPORT - STUDY OF PREGNANCY AND NEONATAL H | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 137,463 |
| PRECLINICAL VECTOR PRODUCTION CORE LABORATORY | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,649,980 |
| PREVENTION OF DISEASE, DISABILITY, AND DEATH BY INFECTIOUS DISEASES | 93.084 | RUSH UNIVERSITY | 21092802-Sub04 | \$ 801,624 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,991 |
| PREVENTIVE MEDICINE RESIDENCY | 93.117 | | | \$ 418,009 | Research and Development | \$ 920,364,194 | \$ - | \$ 418,009 |
| PROJECT GRANTS AND COOPERATIVE AGREEMENTS FOR TUBERCULOSIS CONTROL PROGRAMS | 93.116 | City of Philadelphia (Dept Public Health) | 2020284-03 | \$ 108,871 | N/A | \$ - | \$ - | \$ 108,871 |
| PROMOTING AND SUPPORTING INNOVATION IN TANF DATA | 93.RD | MDCR | HHSF23337005T | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 55,609 |
| PROMOTING SAFE AND STABLE FAMILIES | 93.556 | Lancaster County Children & Youth | N/A | \$ 31,085 | N/A | \$ - | \$ - | \$ 31,085 |
| QUANTITATIVE ANALYSIS OF LONGITUDINAL MR IMAGES IN BLSA PARTICIPANTS | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 294,329 |
| RAPID POINT OF CARE MOLECULAR DIAGNOSTICS OF HCV | 93.RD | PHOENIX BIOSYSTEMS, INC. | SUB TO 75N93021C00051 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 1,537 |
| RESEARCH AND TRAINING IN COMPLEMENTARY AND INTEGRATIVE HEALTH | 93.213 | NEW YORK UNIVERSITY | 17-AO-00-008501 | \$ 441,400 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,764 |
| RESEARCH AND TRAINING IN COMPLEMENTARY AND INTEGRATIVE HEALTH | 93.213 | UNIVERSITY OF MINNESOTA | A0006743802 | \$ 441,400 | Research and Development | \$ 920,364,194 | \$ - | \$ 156,735 |
| RESEARCH AND TRAINING IN COMPLEMENTARY AND INTEGRATIVE HEALTH | 93.213 | | | \$ 441,400 | Research and Development | \$ 920,364,194 | \$ 74,744 | \$ 265,901 |
| RESEARCH INFRASTRUCTURE PROGRAMS | 93.351 | | | \$ 589,789 | Research and Development | \$ 920,364,194 | \$ 65,020 | \$ 589,789 |
| RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000523 | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 37,324 |
| RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | EMORY UNIVERSITY | A015673 | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,314 |
| RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | EMORY UNIVERSITY | A242409 | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 100,221 |
| RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | UNIVERSITY OF WISCONSIN-MADISON | 0000002840 | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 42,338 |
| RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | VISITING NURSE SERVICE OF NEW YORK | 4629_2020_PENN | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 19,274 |
| RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | YALE UNIVERSITY | GR107704 (CON-80001950) | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ - | \$ 9,587 |
| RESEARCH ON HEALTHCARE COSTS, QUALITY AND OUTCOMES | 93.226 | | | \$ 2,531,305 | Research and Development | \$ 920,364,194 | \$ 216,926 | \$ 2,141,801 |
| RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GRT-00000478 | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ - | \$ 213,837 |
| RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | MEDICAL COLLEGE OF WISCONSIN | SUB TO R01DC016622 | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ - | \$ 121,879 |
| RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | MONELL CHEMICAL SENSES CENTER | NIH033806MENNE | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ - | \$ 82,643 |
| RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | MONELL CHEMICAL SENSES CENTER | NIH074 | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ - | \$ 13,924 |
| RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | NORTHWESTERN UNIVERSITY | 60049678 UP | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ - | \$ 29,215 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
Fiscal Period 7/1/2022 - 6/30/2023

| Federal Awarding Agency/Program Title | Federal ALN Number | Name of Funder Pass-Through Entity | Identifying Number Assigned By Funder Pass-Through | Federal Program Total | Cluster Name | Cluster Total | Provided to Sub-Recipients | Federal Expenditures |
|---|--------------------|--|--|-----------------------|------------------------------|----------------|----------------------------|----------------------|
| RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 10858sc | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,558 |
| RESEARCH RELATED TO DEAFNESS AND COMMUNICATION DISORDERS | 93.173 | | | \$ 7,307,773 | Research and Development | \$ 920,364,194 | \$ 67,480 | \$ 6,441,248 |
| RYAN WHITE HIV/AIDS DENTAL REIMBURSEMENT AND COMMUNITY BASED DENTAL PARTNERSHIP GRANTS | 93.924 | | | \$ 112,019 | N/A | \$ - | \$ - | \$ 112,019 |
| SICKLE CELL TREATMENT DEMONSTRATION PROGRAM | 93.865 | JOHNS HOPKINS UNIVERSITY | SUB TO U11EMC27864 | \$ 54,545 | Research and Development | \$ 920,364,194 | \$ - | \$ 54,545 |
| SOCIAL SERVICES BLOCK GRANT | 93.667 | CITY OF PHILADELPHIA (DBHIDS) | 2120005-02 | \$ 219,317 | N/A | \$ - | \$ - | \$ 219,317 |
| SOCIAL SERVICES RESEARCH AND DEMONSTRATION | 93.647 | DREXEL UNIVERSITY | 900209 | \$ 18,854 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,854 |
| SPECIAL PROGRAMS FOR THE AGING_TITLE IV_AND TITLE II_DISCRETIONARY PROJECTS | 93.048 | OASIS INSTITUTE | SUB TO 90CCDC0001 | \$ 73,445 | N/A | \$ - | \$ - | \$ 73,445 |
| SPORE IN SKIN CANCER (PROJECT 1) | 93.088 | WISTAR INSTITUTE | 29050-02-314; Project 1 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 332,127 |
| STRENGTHENING EMERGENCY CARE DELIVERY IN THE UNITED STATES HEALTHCARE SYSTEM THROUGH HEALTH INFORMATION AND PROMOTION | 93.078 | | | \$ 52,398 | Research and Development | \$ 920,364,194 | \$ - | \$ 52,398 |
| SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES_PROJECTS OF REGIONAL AND NATIONAL SIGNIFICANCE | 93.243 | ADAMS COUNTY, PENNSYLVANIA | SUB TO 1H75M081196-01 | \$ 1,124,833 | N/A | \$ - | \$ - | \$ 228,977 |
| SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES_PROJECTS OF REGIONAL AND NATIONAL SIGNIFICANCE | 93.243 | CITY OF PHILADELPHIA | Sub to SAMHSA | \$ 1,124,833 | N/A | \$ - | \$ - | \$ 149,309 |
| SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES_PROJECTS OF REGIONAL AND NATIONAL SIGNIFICANCE | 93.243 | DREXEL UNIVERSITY | 900163 | \$ 1,124,833 | N/A | \$ - | \$ - | \$ 64,609 |
| SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES_PROJECTS OF REGIONAL AND NATIONAL SIGNIFICANCE | 93.243 | Lancaster County Drug & Alcohol Commission | N/A | \$ 1,124,833 | N/A | \$ - | \$ - | \$ 315,069 |
| SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES_PROJECTS OF REGIONAL AND NATIONAL SIGNIFICANCE | 93.243 | PENNSYLVANIA DEPARTMENT OF HUMAN SERVICES | 4000027776 | \$ 1,124,833 | N/A | \$ - | \$ - | \$ 29,801 |
| SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES_PROJECTS OF REGIONAL AND NATIONAL SIGNIFICANCE | 93.243 | | | \$ 1,124,833 | N/A | \$ - | \$ - | \$ 337,068 |
| TASK ORDER 1 - CONTRACEPTIVE DEVELOPMENT PROGRAM NICHD CONTRACEPTIVE C | 93.RD | | | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 12,684 |
| TRAINING IN GENERAL, PEDIATRIC, AND PUBLIC HEALTH DENTISTRY | 93.059 | | | \$ 551,519 | Research and Development | \$ 920,364,194 | \$ - | \$ 551,519 |
| TRANSLATION AND IMPLEMENTATION SCIENCE RESEARCH FOR HEART, LUNG, BLOOD DISEASES, AND SLEEP DISORDERS | 93.840 | NORTHWESTERN UNIVERSITY | 60064251 UPENN | \$ 1,109,194 | Research and Development | \$ 920,364,194 | \$ - | \$ 10,125 |
| TRANSLATION AND IMPLEMENTATION SCIENCE RESEARCH FOR HEART, LUNG, BLOOD DISEASES, AND SLEEP DISORDERS | 93.840 | | | \$ 1,109,194 | Research and Development | \$ 920,364,194 | \$ 383,701 | \$ 1,099,069 |
| TRANS-NIH RESEARCH SUPPORT | 93.310 | CARNEGIE MELLON UNIVERSITY | 1090672-460914 | \$ 12,448,138 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,625 |
| TRANS-NIH RESEARCH SUPPORT | 93.310 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201240619 | \$ 12,448,138 | Research and Development | \$ 920,364,194 | \$ - | \$ 149,595 |
| TRANS-NIH RESEARCH SUPPORT | 93.310 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | GR7-00002303-XX | \$ 12,448,138 | Research and Development | \$ 920,364,194 | \$ - | \$ 133,139 |
| TRANS-NIH RESEARCH SUPPORT | 93.310 | DREXEL UNIVERSITY | 800134 | \$ 12,448,138 | Research and Development | \$ 920,364,194 | \$ - | \$ (10,282) |
| TRANS-NIH RESEARCH SUPPORT | 93.310 | | | \$ 12,448,138 | Research and Development | \$ 920,364,194 | \$ 1,014,662 | \$ 11,453,449 |
| TREATMENT FOR MIXED URINARY INCONTINENCE: MID-URETHRAL SLUNG VS. BOTOX | 93.RD | RESEARCH TRIANGLE INSTITUTE | 0213574/0213581 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,993 |
| ULTRASENSITIVE PSA QUANTITATION USING SMARTPHONE TO REDUCE PROSTATE CA | 93.RD | INSTANOSIS, INC. | SUB TO R41CA254653 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 123,717 |
| UPCC 08422: A PHASE 3, RANDOMIZED, OPEN-LABEL, MULTICENTER STUDY, TO C | 93.RD | BLOOD AND MARROW TRANSPLANTATION CLINICAL TRIALS NETWORK | RIDER 2002 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 5,447 |
| UPCC08421: PHASE II MULTI-CENTER TRIAL OF ANTI-B CELL MATURATION ANTIG | 93.RD | BLOOD AND MARROW TRANSPLANTATION CLINICAL TRIALS NETWORK | BMT CTN PROTOCOL #1902 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 21,375 |
| UPCC35419: CLINICAL TRANSPLANT-RELATED LONG-TERM OUTCOMES OF ALTERNATI | 93.RD | BLOOD AND MARROW TRANSPLANTATION CLINICAL TRIALS NETWORK | PROTOCOL RIDER #1702 | \$ 24,356,909 | Research and Development | \$ 920,364,194 | \$ - | \$ 71,761 |
| VISION RESEARCH | 93.867 | BRIGHAM AND WOMEN'S HOSPITAL | 126553 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 38,478 |
| VISION RESEARCH | 93.867 | CASE WESTERN RESERVE UNIVERSITY | RES517325 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 88,571 |
| VISION RESEARCH | 93.867 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201360819 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 701,824 |
| VISION RESEARCH | 93.867 | CHILDREN'S HOSPITAL OF PHILADELPHIA (CHOP) | 3201580224 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 79,119 |
| VISION RESEARCH | 93.867 | COLUMBIA UNIVERSITY | 1(GG013955-01) | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 134,286 |
| VISION RESEARCH | 93.867 | DOHERTY EYE INSTITUTE | 10614-UPenn | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 8,121 |
| VISION RESEARCH | 93.867 | DUKE UNIVERSITY | 303001347 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 18,733 |
| VISION RESEARCH | 93.867 | DUKE UNIVERSITY | 303001464 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 31,635 |
| VISION RESEARCH | 93.867 | DUKE UNIVERSITY | A034815 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 96,056 |
| VISION RESEARCH | 93.867 | FOX CHASE CHEMICAL DIVERSITY CENTER | R41EY03091-UP | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ (2,418) |
| VISION RESEARCH | 93.867 | HARVARD MEDICAL SCHOOL | 150507.5117091.0003 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 24,813 |
| VISION RESEARCH | 93.867 | JAEB CENTER FOR HEALTH RESEARCH | EY 14231 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 700 |
| VISION RESEARCH | 93.867 | JAEB CENTER FOR HEALTH RESEARCH | SUB TO UG1EY014231 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 3,579 |
| VISION RESEARCH | 93.867 | JOHNS HOPKINS UNIVERSITY | 200443095 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ (1,514) |
| VISION RESEARCH | 93.867 | JOHNS HOPKINS UNIVERSITY | 2005421250 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 180,977 |
| VISION RESEARCH | 93.867 | NEW ENGLAND COLLEGE OF OPTOMETRY | 3708-07-01.2020UPenn | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 124,741 |
| VISION RESEARCH | 93.867 | NEW YORK UNIVERSITY | 16-A0-0005168 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 43,664 |
| VISION RESEARCH | 93.867 | NEW YORK UNIVERSITY | SUB TO U11EY026869 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 6,488 |
| VISION RESEARCH | 93.867 | STANFORD UNIVERSITY | 63004890-245349 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,240 |
| VISION RESEARCH | 93.867 | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | 14569sc | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 52,282 |
| VISION RESEARCH | 93.867 | UNIVERSITY OF PITTSBURGH | AWD00006564 (138813-1) | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 150,633 |
| VISION RESEARCH | 93.867 | VANDERBILT UNIVERSITY MEDICAL CENTER | VUMC91400 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 90,904 |
| VISION RESEARCH | 93.867 | WASHINGTON UNIVERSITY IN ST. LOUIS | WU-23-0027 | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ - | \$ 35,959 |
| VISION RESEARCH | 93.867 | | | \$ 16,613,428 | Research and Development | \$ 920,364,194 | \$ 1,307,344 | \$ 14,685,557 |
| LDS MEDICAL ISSUD AFTER 07/01/2022 | 93.342 | | | \$ 17,374,886 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 32,177 |
| HPL MEDICAL OUTSTANDING AS OF 07/01/2022 | 93.342 | | | \$ 17,374,886 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 133,177 |
| NURSING STUDENT LOAN UNDERGRADUATE NEW LOANS ISSUED DURING 2023 | 93.364 | | | \$ 4,148,414 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 279,327 |
| HPL VET ISSUED AFTER 07/01/2022 | 93.342 | | | \$ 17,374,886 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 317,200 |
| NURSE FACULTY LOAN PROGRAM ISSUED DURING FY23 | 93.264 | | | \$ 2,866,867 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 390,395 |
| NURSING STUDENT LOAN GRADUATE OUTSTANDING LOANS ISSUED AS OF 07/01/2022 | 93.364 | | | \$ 4,148,414 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 522,103 |
| HPL DENTAL ISSUED AFTER 07/01/2022 | 93.342 | | | \$ 17,374,886 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 777,764 |
| LDS MEDICAL OUTSTANDING AS OF 07/01/2022 | 93.342 | | | \$ 17,374,886 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 2,385,194 |
| NURSE FACULTY LOAN PROGRAM OUTSTANDING AS OF 07/01/22 | 93.264 | | | \$ 2,866,867 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 2,476,472 |
| NURSING STUDENT LOAN UNDERGRADUATE OUTSTANDING LOANS ISSUED AS OF 07/01/2022 | 93.364 | | | \$ 4,148,414 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 3,319,826 |
| HPL DENTAL OUTSTANDING AS OF 07/01/2022 | 93.342 | | | \$ 17,374,886 | STUDENT FINANCIAL ASSISTANCE | \$ 273,232,666 | \$ - | \$ 11,007,366 |
| COVID-19 - PROVIDER RELIEF FUND | 93.498 | | | \$ 19,005,831 | N/A | \$ - | \$ - | \$ 19,005,831 |
| DEPARTMENT OF HEALTH AND HUMAN SERVICES Total | | | | | | \$ 95,093,045 | \$ - | \$ 826,881,003 |
| CORPORATION FOR NATIONAL AND COMMUNITY SERVICE | | | | | | | | |
| AMERICORPS | 94.006 | COMMONWEALTH OF PENNSYLVANIA | AMERICORP 2021-2022 | \$ 439,402 | N/A | \$ - | \$ - | \$ 72,726 |
| AMERICORPS | 94.006 | COMMONWEALTH OF PENNSYLVANIA | NEXT STEPS AMERICORPS 22/23 | \$ 439,402 | N/A | \$ - | \$ - | \$ 262,718 |
| AMERICORPS | 94.006 | | | \$ 439,402 | N/A | \$ - | \$ - | \$ 103,958 |
| COVID-19 - ENHANCING THE PUBLIC HEALTH RESPONSE TO DOMESTIC VIOLENCE IN THE CONTE | 94.RD | ARIZONA STATE UNIVERSITY | ASUB00001170 | \$ 20,823 | Research and Development | \$ 920,364,194 | \$ - | \$ 20,823 |
| VOLUNTEERS IN SERVICE TO AMERICA | 94.013 | | | \$ 555,942 | N/A | \$ - | \$ - | \$ 555,942 |
| CORPORATION FOR NATIONAL AND COMMUNITY SERVICE Total | | | | | | \$ - | \$ - | \$ 1,016,167 |
| DEPARTMENT OF HOMELAND SECURITY | | | | | | | | |
| DETECTION CANINE SCIENCES, INNOVATION, TECHNOLOGY AND EDUCATION (DCSIT | 97.RD | AUBURN UNIVERSITY | 22-CVM-212013-UPENN | \$ 311,065 | Research and Development | \$ 920,364,194 | \$ - | \$ 311,065 |
| COVID-19 - FEMA PUBLIC ASSISTANCE GRANTS | 97.036 | Pennsylvania Emergency Management Agency | 410009096 | \$ 5,672,092 | N/A | \$ - | \$ - | \$ 1,357,586 |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

UNIVERSITY OF PENNSYLVANIA
 SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
 Fiscal Period 7/1/2022 - 6/30/2023

| <i>Federal Awarding Agency/Program Title</i> | <i>Federal ALN Number</i> | <i>Name of Funder Pass-Through Entity</i> | <i>Identifying Number Assigned By Funder Pass-Through Entity</i> | <i>Federal Program Total</i> | <i>Cluster Name</i> | <i>Cluster Total</i> | <i>Provided to Sub-Recipients</i> | <i>Federal Expenditures</i> | |
|--|---------------------------|---|--|------------------------------|--------------------------|----------------------|-----------------------------------|-----------------------------|---------------------|
| COVID-19 - FEMA PUBLIC ASSISTANCE GRANTS | 97.036 | Pennsylvania Emergency Management Agency | N/A | \$ 5,672,092 | N/A | \$ - | \$ - | \$ 4,314,506 | |
| DEPARTMENT OF HOMELAND SECURITY Total | | | | | | | \$ - | \$ - | \$ 5,983,157 |
| U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT | | | | | | | | | |
| CULTURAL CHANGE FOR TRANSPARENCY OFFICE OF THE ATTORNEY GENERAL OF THE | 98.RD | DAI GLOBAL, LLC | 1004341-101 | \$ 969,134 | Research and Development | \$ 920,364,194 | \$ 59,101 | \$ 82,978 | |
| INTERNEWS - INSPIRES PROJECT | 98.RD | INTERNEWS NETWORK, INC. | SGR-IN-GX1874-FD-103 m00 | \$ 969,134 | Research and Development | \$ 920,364,194 | \$ - | \$ 859,594 | |
| SBAR CAMBODIA SOLID WASTE ACCOUNTABILITY PLATFORM (SWAP) | 98.RD | DUKE UNIVERSITY | 389-000039 | \$ 969,134 | Research and Development | \$ 920,364,194 | \$ - | \$ 26,562 | |
| USAID FOREIGN ASSISTANCE FOR PROGRAMS OVERSEAS | 98.001 | CLOUDBURST GROUP | 103603-055-001 | \$ 271,244 | Research and Development | \$ 920,364,194 | \$ - | \$ 7,993 | |
| USAID FOREIGN ASSISTANCE FOR PROGRAMS OVERSEAS | 98.001 | CLOUDBURST GROUP | PENN-103119-001 | \$ 271,244 | Research and Development | \$ 920,364,194 | \$ - | \$ 36,511 | |
| USAID FOREIGN ASSISTANCE FOR PROGRAMS OVERSEAS | 98.001 | DEVTECH SYSTEMS, INC. | DEVTECH-UPENN-SC-2022-02 | \$ 271,244 | Research and Development | \$ 920,364,194 | \$ - | \$ 50,203 | |
| USAID FOREIGN ASSISTANCE FOR PROGRAMS OVERSEAS | 98.001 | MAKING CENTS INTERNATIONAL, INC. | ATARI-01 | \$ 271,244 | Research and Development | \$ 920,364,194 | \$ - | \$ 56,691 | |
| USAID FOREIGN ASSISTANCE FOR PROGRAMS OVERSEAS | 98.001 | NATIONAL OPINION RESEARCH CENTER | 8389.073.UPENN.01 | \$ 271,244 | Research and Development | \$ 920,364,194 | \$ - | \$ 119,746 | |
| U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT Total | | | | | | | \$ 59,101 | \$ 1,240,378 | |
| TOTAL EXPENDITURE OF FEDERAL AWARDS | | | | | | | \$ 115,484,534 | \$ 1,236,878,882 | |

The accompanying Notes to the Schedule of Expenditures of Federal Awards are an integral part of the schedule.

University of Pennsylvania
Notes to Schedule of Expenditures of Federal Awards
June 30, 2023

1. Basis of Presentation

The Schedule of Expenditures of Federal Awards (the “Schedule”) has been prepared to present a summary of those activities of the University of Pennsylvania for the year ended June 30, 2023, which have been financed by the U.S. Government (“Federal awards”) and is presented on the accrual basis of accounting. The information in this schedule is presented in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance).

For purposes of the Schedule, Federal awards include all Federal assistance entered into directly between the University of Pennsylvania and the Federal government and sub-awards from non-Federal organizations made under federally sponsored agreements. Because the Schedule presents only a selected portion of the activities of the University of Pennsylvania, it is not intended to and does not present the financial position or the revenues, expenses or changes in net assets of the University of Pennsylvania.

The University 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 the Uniform Guidance.

Negative amounts on the schedule represent adjustments in the normal course of business to amounts reported in previous years. Assistance Listing and pass-through award numbers are presented where available.

2. Federal Student Financial Assistance

The federal student loan programs included within the Student Financial Aid Cluster on the Schedule of Expenditures of Federal Awards above, with the exception of Federal Direct Loans, are administered directly by the University and balances and transactions relating to these programs are included in the University’s consolidated financial statements. Loans outstanding at the beginning of the year and loans made during the year are included in the federal expenditures presented in the Schedule. The amounts of Federal Loans outstanding as of June 30, 2023 are shown below.

| Federal Grantor/Program | Assistance Listing Number | Outstanding Balance as of 6/30/2023 |
|--|----------------------------------|--|
| Department of Education | | |
| Perkins Loan | 84.038 | 9,206,415 |
| Department of Health and Human Services | | |
| Health Professions Student Loans - Dental | 93.342 | 10,930,488 |
| Health Professions Student Loans - Medical | 93.342 | 121,177 |
| Health Professions Student Loans - Vet | 93.342 | 2,965,861 |
| Loans for Disadvantaged Students - Medical | 93.342 | 2,252,804 |
| Nursing Student Loan - Graduate | 93.364 | 466,861 |
| Nurse Faculty Loan Program | 93.264 | 2,553,502 |
| Nursing Student Loan - Undergraduate | 93.364 | 3,138,696 |

University of Pennsylvania
Notes to Schedule of Expenditures of Federal Awards
June 30, 2023

3. Federal Emergency Management Agency (“FEMA”)

As of June 30, 2023, the University received approval for \$5.7M of claims submitted to FEMA during 2023 under Assistance Listing Number 97.036. The claims submitted represented incurred expenses attributed to the University’s response to COVID-19. The fiscal year 2023 Schedule includes expenses of \$5.7M which were incurred in a prior year.

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 Trustees of the University of Pennsylvania

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 University of Pennsylvania and its subsidiaries (the "University"), which comprise the consolidated statement of financial position as of June 30, 2023, and the related consolidated statements of activities and of cash flows for the year then ended, including the related notes (collectively referred to as the "consolidated financial statements"), and have issued our report thereon dated September 28, 2023.

Report on Internal Control Over Financial Reporting

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

Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether the University's consolidated 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 University'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 University's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania
September 28, 2023



Report of Independent Auditors on Compliance for Each Major Program and on Internal Control Over Compliance Required by Uniform Guidance

To the Trustees of the University of Pennsylvania

Report on Compliance for Each Major Federal Program

Opinion on Each Major Federal Program

We have audited University of Pennsylvania and its subsidiaries' (the "University") compliance with the types of compliance requirements identified as subject to audit in the OMB *Compliance Supplement* that could have a direct and material effect on each of the University's major federal programs for the year ended June 30, 2023. The University's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

In our opinion, the University complied, in all material respects, with the compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2023.

Basis for Opinion on Each Major Federal Program

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America (US GAAS); 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). Our responsibilities under those standards and the Uniform Guidance are further described in the Auditors' Responsibilities for the Audit of Compliance section of our report.

We are required to be independent of the University and to meet our other ethical responsibilities, in accordance with relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on compliance for each major federal program. Our audit does not provide a legal determination of the University's compliance with the compliance requirements referred to above.

Responsibilities of Management for Compliance

Management is responsible for compliance with the requirements referred to above and for the design, implementation, and maintenance of effective internal control over compliance with the requirements of laws, statutes, regulations, rules and provisions of contracts or grant agreements applicable to the University's federal programs.



Auditors' Responsibilities for the Audit of Compliance

Our objectives are to obtain reasonable assurance about whether material noncompliance with the compliance requirements referred to above occurred, whether due to fraud or error, and express an opinion on the University's compliance based on our audit. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with US GAAS, *Government Auditing Standards*, and the Uniform Guidance will always detect material noncompliance when it exists. The risk of not detecting material noncompliance resulting from fraud is higher than for that resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Noncompliance with the compliance requirements referred to above is considered material, if there is a substantial likelihood that, individually or in the aggregate, it would influence the judgment made by a reasonable user of the report on compliance about the University's compliance with the requirements of each major federal program as a whole.

In performing an audit in accordance with US GAAS, *Government Auditing Standards*, and the Uniform Guidance, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material noncompliance, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the University's compliance with the compliance requirements referred to above and performing such other procedures as we considered necessary in the circumstances.
- Obtain an understanding of the University's internal control over compliance relevant to the audit in order to design audit procedures that are appropriate in the circumstances 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 the University's internal control over compliance. Accordingly, no such opinion is expressed.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and any significant deficiencies and material weaknesses in internal control over compliance that we identified during the audit.

Other Matters

The results of our auditing procedures disclosed instances of noncompliance, which are required to be reported in accordance with the Uniform Guidance and which are described in the accompanying schedule of findings and questioned costs as items 2023-001 and 2023-002. Our opinion on each major federal program is not modified with respect to these matters.

Government Auditing Standards requires the auditor to perform limited procedures on the University's response to the noncompliance findings identified in our audit described in the accompanying Management's View and Corrective Action Plan. The University's response was not subjected to the other auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response.



Report on 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 Auditors' Responsibilities for the Audit of Compliance section above and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies in internal control over compliance. Given these limitations, during our audit we did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses, as defined above. However, material weaknesses or significant deficiencies in internal control over compliance may exist that were not identified.

Our audit was not designed for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, no such opinion is expressed.

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

Philadelphia, Pennsylvania
November 29, 2023

III. Schedule of Findings and Questioned Costs

**University of Pennsylvania
Schedule of Findings and Questioned Costs
June 30, 2023**

Section I – Summary of Auditors’ Results

Consolidated Financial Statements

- (i) Type of auditors’ report issued: Unmodified
- (ii) Internal control over financial reporting:
 Material weakness(es) identified? ___ yes X no
 Significant deficiency(ies) identified that are
 not considered to be material weaknesses? ___ yes X none reported
- (iii) Noncompliance material to financial statements
 noted? ___ yes X no

Federal Awards

- (iv) Internal control over major programs:
 Material weakness(es) identified? ___ yes X no
 Significant deficiency(ies) identified that are
 not considered to be material weaknesses? ___ yes X none reported
- (v) Type of auditors’ report issued on compliance
 for major programs: Unmodified
- (vi) Any audit findings disclosed that are required
 to be reported in accordance with
 2 CFR 200.516(a)? X yes ___ no
- (vii) Identification of major programs:

| Assistance Listing Number(s) | Name of Federal Program or Cluster |
|---|---|
| Various | Research and Development Cluster |
| 93.498 | COVID-19 Provider Relief Fund and American Rescue Plan (ARP) Rural Distribution |
| 93.914 | HIV Emergency Relief Project Grants (Ryan White HIV/AIDS Program Part A) |

- (viii) Dollar threshold used to distinguish between
 Type A and Type B programs: \$3,710,637
- (ix) Auditee qualified as low-risk auditee? X yes ___ no

Section II – Financial Statement Findings

None noted.

University of Pennsylvania
Schedule of Findings and Questioned Costs
June 30, 2023

Section III – Federal Awards Findings and Questioned Costs

2023-001 Eligibility

Federal Grantor: Department of Health and Human Services, Health Resources and Services Administration (“HRSA”)
Pass-through Entity: City of Philadelphia, AIDS Activity Coordinating Office (“AACO”)
Assistance Listing Title: HIV Emergency Relief Project Grants – Outpatient/Ambulatory Medical Care
Assistance Listing Number: 93.914
Award Year: 2023
Award Number: RW2965
Pass-through Number: 2120575-01

Criteria

Per the Ryan White Client Certification Form Instructions provided to management by the AIDS Activity Coordinating Office, “The certification process must begin for all clients upon initial intake for services and final eligibility is determined once all supporting documentation has been received and verified.” Additionally, the form states that copy of all documentation are to be retained by the provider.

The City of Philadelphia Subrecipient Audit Guide Section 6130.04 provides a list of documents to be maintained and states “case management service providers are required to keep a file on each client served.”

Further, per the Universal Monitoring Standards set forth by HRSA, the Ryan White HIV/AIDS Program Part A and B Monitoring Standards require service providers who receive Ryan White funding to screen to certify eligibility for Ryan White-funded services. The guidance states that documentation of eligibility determination is required in client records, as evidenced by copies of documents.

Condition

We reviewed a sample of 65 program participants to verify eligibility during the fiscal year. Of the 65 selected, there were 6 program participants at the Wood Clinic within the Clinical Care Associates of the University of Pennsylvania Health System (“Health System”) in which the Health System did not maintain Ryan White certification cards as documentation evidencing the control in place to certify the verification of the program participant’s eligibility. However, for all 6 program participants, the Health System provided records to support that the program participant met the eligibility requirements.

Cause

Management of the Health System noted that the AACO program at the Wood Clinic ended in November 2022 and the individuals involved in the process did not maintain the documentation evidencing that management verified participant eligibility in the program.

Effect

Program participants accepted into the program may be ineligible and the Health System may not be able to demonstrate eligibility of the participants.

Questioned Costs

None

**University of Pennsylvania
Schedule of Findings and Questioned Costs
June 30, 2023**

Recommendation

The Health System should ensure that all individuals involved in the Ryan White certification process are educated that documentation is required to be maintained to support verification of program participant eligibility.

Management’s View and Corrective Action Plan

Management’s view and corrective action plan is included at the end of this report.

2023-002 Procurement, Suspension and Debarment

Federal Grantor: Department of Health and Human Services and Department of Defense
Program: Research and Development Cluster
Assistance Listing Title: Extramural Research Programs in the Neurosciences and Neurological Disorders; Military Medical Research and Development
Assistance Listing Number: 93.853, 12.420
Award Year: 7/1/2022 - 6/30/2023
Award Number: 1-DP2-NS-111996-01, W81XWH2010901
Pass-through Entity: Not applicable
Pass-through Number: Not applicable

Criteria

Per 2 CFR section 180.220, non-federal entities are prohibited from contracting with or making subawards under covered transactions, where vendor purchases exceed \$25,000, to parties that are suspended or debarred. When a non-federal entity enters into a covered transaction, the non-federal entity must verify that the vendor is not suspended or debarred or otherwise excluded from participating in the transaction. This verification may be accomplished by (1) checking the System for Award Management (SAM) Exclusions maintained by the General Services Administration (GSA) and available at SAM.gov, (2) collecting a certification from the Vendor, or (3) adding a clause or condition to the covered transaction with that Vendor. University’s policies mirror the procurement policies as required by the Federal government, and defines a covered transaction as purchases exceeding \$10,000.

Condition

In testing compliance with the suspension and debarment compliance requirement, 2 instances of 25 samples selected for testing were noted where the only evidence available to support the date of the performance of the required suspension and debarment checks was after the transaction date, as shown in the chart below. This is a repeat of prior year finding 2022-002.

| ALN# | Award Number | Vendor Name | Purchase Order Amount | Invoice Amount | Payment Date | Evidence Date Check Performed |
|--------|--------------------|-------------------------|-----------------------|----------------|--------------|-------------------------------|
| 93.853 | 1-DP2-NS-111996-01 | BMG LABTECH INC | \$36,100 | \$36,100 | 9/13/2022 | 2/24/2023 |
| 12.420 | W81XWH2010901 | DIAGNOSTIC BIOCHIPS INC | \$23,360 | \$4,160 | 2/9/2023 | 2/24/2023 |

Cause

The University uses Visual Compliance (VC) for suspension and debarment checks, which was implemented in 2019. Vendors onboarded prior to the implementation were registered and checked via a separate manual process within the procurement department. The above vendors were on-boarded and checked prior to the VC implementation; however, management could not provide evidence that the vendor check was performed prior to conducting business with the vendor due to the manual nature of the legacy process. Management has subsequently performed checks on these vendors and retained documentation of the checks to validate that the vendors are not currently suspended or debarred.

University of Pennsylvania
Schedule of Findings and Questioned Costs
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Effect

If procedures related to vendor suspended and debarred checks are not performed timely, there is a risk that the purchases could be made with a suspended or debarred vendor.

Questioned Costs

There are no questioned costs associated with this finding.

Recommendation

We recommend the University continue to follow its corrective action plan.

Management's View and Corrective Action Plan

Management's view and corrective action plan is included at the end of this report.

**University of Pennsylvania
Summary Schedule of Prior Audit Findings
June 30, 2023**

Section III – Federal Awards Findings and Questioned Costs

Finding 2022-001 Cash Management

Grantor: Department of Defense, Department of Human and Health Services, National Science Foundation
Program: Research and Development Cluster; Trio Cluster
Assistance Listing#: 93.397, 12.630, 93.855, 93.847, 93.RD, 47.041
Title: Cancer Centers Support Grants; Basic, Applied, and Advanced Research in Science and Engineering; Allergy and Infectious Disease Research; Diabetes, Digestive, and Kidney Diseases Extramural Research; NAID Centers of Excellence for Influenza Research and Response; COVID-19 -Engineering
Award Year: 07/1/2021 – 06/30/2022
Award Number: 5-P30-CA-016520-46, W911NF-17-2-0181, 5-R01-AI-108686-09, 2-U01-DK-112217-02A1, 75N93021C00015, CMMI-1548571
Passthrough number: Not Applicable

Summary

Per the OMB Compliance Supplement, the non-Federal entity must disburse funds for program purposes before requesting payment from the Federal awarding agency or pass-through entity. In testing conformity with the cash management reimbursement-method, 40 individual expenditures were tested to compare the date of University payment to the vendor to the date of Government reimbursement to the University. Seven instances were noted in which the University paid the vendor after requesting and receiving reimbursement from the government.

Status Update

OMB has brought the 2023 Compliance Supplement in alignment with the requirements for cash management as written in 2 CFR Part 200.305(b), and the auditors did not note any findings in the cash management testing for the FY23 audit.

Finding 2022-002 Procurement, Suspension and Debarment

Grantor: Department of Defense
Program: Research and Development Cluster
Assistance listing#: 12.910
Title: Research and Technology Development
Award Year: 07/1/2021 – 06/30/2022
Award Number: FA8750-18-2-0117
Passthrough number: Not Applicable

Summary

Per 2 CFR section 180.220, the non-federal entity must verify that the vendor is not suspended or debarred or otherwise excluded from participating in covered transactions. In testing compliance with the suspension and debarment compliance requirement, one instance out of 25 samples selected for tested was noted where the only evidence available to support the date of the performance of the required suspension and debarment checks was after the transaction date.

Status Update

See the current year finding 2023-002 and management response for additional information.

Management View and Corrective Action Plan**Finding 2023-001 Eligibility**

Federal Grantor: Department of Health and Human Services, Health Resources and Services Administration (“HRSA”)

Pass-through Entity: City of Philadelphia, AIDS Activity Coordinating Office (“AACO”)

Assistance Listing Title: HIV Emergency Relief Project Grants – Outpatient/Ambulatory Medical Care

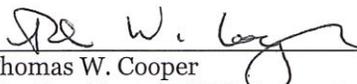
Assistance Listing Number: 93.914

Award Year: 2023

Award Number: RW2965

Pass-through Number: 2120575-01

While this finding is isolated to the Wood Clinic which ended its AACO program in November 2022, we have communicated the requirement to maintain supporting award documentation to all Penn Medicine practices continuing with Ryan White programs.



Thomas W. Cooper
Vice President / UPHS Corporate Finance
thomas.cooper@pennmedicine.upenn.edu
267-414-2344



Office of Research Services

Management View and Corrective Action Plan

Finding 2023-002 Procurement, Suspension and Debarment

The University uses the Visual Compliance tool to provide dynamic screening of vendors in order to reduce administrative burden, eliminating the need to run screenings periodically, and to provide timely notification of any potential suspension and debarment issues with vendors. As part of the FY22 audit, we realized that during the transition from manual screening of vendors to the integration of Visual Compliance with our vendor system, the initial screening in Visual Compliance for certain vendors, appeared to have been missed. Therefore, in February 2023, the Procurement Office ran a batch screen on all active vendors missing the screening documentation in VC at that time; and no further action is needed as a result of the current finding. However, due to the timing of that corrective action plan, the 2 vendors, BMG Labtech Inc and Diagnostic Biochips Inc, had invoices paid in FY23 prior to the corrective action such that there was no evidence of their screening in our system at the time of payment.

A handwritten signature in cursive script that reads "Elizabeth D. Peloso".

Elizabeth D. Peloso
Associate Vice President / Associate Vice Provost Research Services
epeloso@upenn.edu
215-898-7293