Independent Auditor's Reports as Required by Title 2 U.S. *Code of Federal Regulations* Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards and *Government Auditing Standards* and Related Information

National Academy of Sciences

December 31, 2023 and 2022

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REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

To the Audit Committee of the
National Academy of Sciences:

Report on the financial statements

Opinion

We have audited the financial statements of the National Academy of Sciences ("NAS"), which comprise the statements of financial position as of December 31, 2023 and 2022, and the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of NAS as of December 31, 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 audits of the financial statements 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 (*Government Auditing Standards*). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of NAS and to meet our other ethical responsibilities in accordance with the relevant ethical requirements relating to our audits. 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 financial statements

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

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 NAS' ability to continue as a going concern for one year after the date the financial statements are issued.

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Auditor's responsibilities for the audit of the 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 auditor's 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 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 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 NAS' 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 financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about NAS' 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.

Supplementary information
Our audits were conducted for the purpose of forming an opinion on the financial statements as a whole. The schedule of expenditures of federal awards for the year ended December 31, 2023, as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, is presented for purposes of additional analysis and is not a required part of the financial statements. Such supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audits of the financial statements and certain additional procedures. These additional procedures included comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or

to the financial statements themselves, and other additional procedures in accordance with US GAAS. In our opinion, the accompanying supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole.

Other reporting required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 13, 2024 on our consideration of NAS' 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. 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 NAS' 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 NAS' internal control over financial reporting and compliance.

Grant Thornton LLP

Melville, New York
June 13, 2024

NATIONAL ACADEMY OF SCIENCES
Statements of Financial Position
As of December 31, 2023 and 2022
(in thousands)

	2023	2022
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents (Note 2)	$ 42,323	$ 43,519
Contracts receivable, net (Note 2)	78,350	50,405
Contributions and other receivables, net (Notes 2 and 4)	23,687	23,773
Other current assets	12,544	12,826
Total current assets	156,904	130,523
Other assets (Notes 2, 13, and 15)	31,532	26,424
Investments (Notes 2 and 3)	1,239,913	1,197,392
Contributions receivable, net (Notes 2 and 4)	3,364	6,150
Property and equipment, net (Notes 2 and 5)	128,118	131,317
Einstein Memorial	1,723	1,723
Total assets	$ 1,561,554	$ 1,493,529
LIABILITIES AND NET ASSETS		
CURRENT LIABILITIES		
Accounts payable and accrued expenses	$ 34,757	$ 30,433
Deferred revenue and advances (Notes 2 and 11)	70,106	78,534
Other current liabilities (Notes 2, 12, 14, and 15)	9,328	9,932
Total current liabilities	114,191	118,899
Bonds payable, net (Note 12)	129,747	134,683
Funds held on behalf of others (Note 3)	13,185	12,576
Accrued employee benefits (Note 13)	3,250	2,454
Other long-term liabilities (Notes 2, 12, and 15)	4,563	5,628
Total liabilities	264,936	274,240
Commitments and contingencies (Notes 3, 11, 12, 13, and 15)		
NET ASSETS		
Without donor restrictions	181,150	148,371
With donor restrictions (Notes 8 and 9)	1,115,468	1,070,918
Total net assets	1,296,618	1,219,289
Total liabilities and net assets	$ 1,561,554	$ 1,493,529

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

NATIONAL ACADEMY OF SCIENCES

Statements of Activities

For the years ended December 31, 2023 and 2022

(in thousands)

	2023			2022		
	Without Donor Restrictions	With Donor Restrictions	Total	Without Donor Restrictions	With Donor Restrictions	Total
Revenues, gains, losses, and other support						
Government contracts and grants (Notes 2 and 11)	$ 200,616	$ -	$ 200,616	$ 195,391	$ -	$ 195,391
Private contracts and grants	17,452	41,737	59,189	15,641	56,312	71,953
Other contributions	3,477	3,922	7,399	2,194	5,027	7,221
Fees and publications	16,109	-	16,109	17,534	-	17,534
Investment income (loss)	18,656	116,208	134,864	(16,515)	(156,142)	(172,657)
Other income (Notes 5 and 12)	33,208	-	33,208	17,286	-	17,286
Net assets released from restriction (Note 8)	117,317	(117,317)	-	99,973	(99,973)	-
Total revenues, gains, losses, and other support	406,835	44,550	451,385	331,504	(194,776)	136,728
Expenses (Note 2)						
Programs (Note 10)	302,595	-	302,595	286,909	-	286,909
Management and general	72,855	-	72,855	63,086	-	63,086
Fundraising	4,073	-	4,073	3,399	-	3,399
Total expenses	379,523	-	379,523	353,394	-	353,394
Other components of net periodic benefit credit (Note 13)	(1,608)	-	(1,608)	(2,478)	-	(2,478)
Postretirement changes other than net periodic benefit credit (Note 13)	(3,859)	-	(3,859)	(158)	-	(158)
Change in net assets	32,779	44,550	77,329	(19,254)	(194,776)	(214,030)
Net assets at beginning of year	148,371	1,070,918	1,219,289	167,625	1,265,694	1,433,319
Net assets at end of year	$ 181,150	$ 1,115,468	$ 1,296,618	$ 148,371	$ 1,070,918	$ 1,219,289

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

NATIONAL ACADEMY OF SCIENCES
Statements of Cash Flows
For the years ended December 31, 2023 and 2022
(in thousands)

	2023	2022
Cash flows from operating activities		
Change in net assets	$ 77,329	$ (214,030)
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Depreciation and amortization	5,855	5,913
(Gain) loss on disposal of property and equipment	(12,528)	59
Bad debt (recovery) expense	(203)	668
Net (gain) loss on investments	(123,188)	179,682
Net (gain) loss on investments held on behalf of others	(1,322)	1,460
Change in value of interest-rate swap	(297)	(2,059)
Change in value of split-interest agreements	(942)	955
Contributions restricted for endowment	(2,835)	(3,432)
Decrease (increase) in assets:		
Other receivables	2,110	(3,780)
Contracts receivable	(26,980)	1,433
Other current assets	282	(3,317)
Other assets	(4,258)	(3,933)
Increase (decrease) in liabilities:		
Accounts payable and accrued expenses	4,324	(4,891)
Deferred revenue and advances	(8,428)	4,576
Other current liabilities	(664)	1,142
Funds held on behalf of others	609	(2,499)
Accrued employee benefits	796	153
Other long-term liabilities	(691)	(653)
Net cash used in operating activities	(91,031)	(42,553)
Cash flows from investing activities		
Additions to property and equipment	(2,711)	(1,297)
Proceeds from sales of property and equipment	12,717	-
Sales or maturities of investments	321,392	268,356
Purchases of investments	(239,403)	(268,746)
Net cash provided by (used in) investing activities	91,995	(1,687)
Cash flows from financing activities		
Contributions restricted for endowment	2,835	3,432
Proceeds from lines of credit	50,988	-
Payments on lines of credit	(50,988)	-
Payments on bond principal	(4,995)	(4,930)
Net cash used in financing activities	(2,160)	(1,498)
NET DECREASE IN CASH AND CASH EQUIVALENTS	(1,196)	(45,738)
Cash and cash equivalents, beginning of year	43,519	89,257
Cash and cash equivalents, end of year	$ 42,323	$ 43,519
Supplemental disclosure of cash flow information		
Interest paid	$ 6,882	$ 3,506

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

NOTE 1 - ORGANIZATION

National Academy of Sciences

The National Academy of Sciences ("NAS") was formed under a charter that was passed as an Act of Incorporation by the United States Congress and signed into law on March 3, 1863. NAS operates as a private membership organization of distinguished scholars engaged in scientific or engineering research, dedicated to the furtherance of science and its use for the general welfare.

National Research Council

Most of the activities undertaken by NAS are carried out through the divisions and boards of the National Research Council ("NRC"). The NRC draws on a wide cross section of the nation's leading scientists and engineers for advisory services to government agencies and Congress. To respond effectively to both the disciplinary concerns of the research community and the complex interdisciplinary problems facing American society, NRC performs its studies and workshops through the following major divisions:

- Behavioral and Social Sciences and Education;
- Earth and Life Studies;
- Engineering and Physical Sciences;
- Gulf Research Program;
- Health and Medicine;
- Policy and Global Affairs; and
- Transportation Research Board.

NRC activities are under the control of the NAS governance structure and, therefore, are included in the NAS financial statements.

National Academy of Medicine

The Institute of Medicine ("IOM"), which was established in 1970, was reconstituted as the National Academy of Medicine ("NAM") effective June 1, 2015. NAM is a separate membership organization within NAS, and issues position statements on policy issues related to health and medicine, cooperates with the major scientific and professional societies in the field, identifies qualified individuals to serve on study groups in other organizational units, and disseminates information to the public and the relevant professions. The financial activities and results of NAM are included in the NAS financial statements.

National Academy of Engineering

The National Academy of Engineering ("NAE") was established in 1964 under the charter of NAS as a related parallel organization, autonomous in its governance, administration, and the selection of its members. NAE shares with NAS the responsibility for advising the federal government on scientific issues. The NAE conducts independent program activities and activities through the NRC. The results of both of these activities are included in the NAS financial statements.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting

Net assets and changes in net assets are classified based on the existence or absence of donor-imposed restrictions. Accordingly, net assets are classified and reported as follows:

Net assets without donor restrictions: net assets that are not subject to donor-imposed stipulations.

Net assets with donor restrictions: net assets subject to donor-imposed stipulations that will be met by actions of NAS and/or the passage of time (Note 8). In addition, net assets with donor restrictions also include net assets whereby the respective donors have stipulated that the principal contributed be invested and maintained in perpetuity (Note 9). Income earned from these investments is available for expenditure according to restrictions, if any, imposed by donors.

Cash Equivalents

NAS reports liquid, temporary investments purchased with original maturities of three months or less as cash equivalents. Cash equivalents managed by NAS' investment managers as part of its long-term investment strategy are included in investments.

Investments

Investments are stated at fair value. Changes in the fair value of investments are reported within investment income in the accompanying statements of activities.

Purchases and sales of securities are reflected on a trade-date basis. Gains and losses on sales of securities are based on average cost and are recorded in the statement of activities in the period in which the securities are sold. Dividends are accrued based on the ex-dividend date. Interest is recognized as earned.

Property and Equipment

Depreciation of NAS' property and equipment is computed on a straight-line basis using the following lives:

Asset Class	Depreciable Lives
Buildings	40 years
Building improvements	Lesser of the remaining life of the building or improvement
Leasehold improvements	Lesser of the remaining life of the lease or improvement
Furniture and equipment	3 to 20 years
Capitalized software	3 to 10 years

The Einstein Memorial sculpture is valued at cost and is not depreciated. Work in progress is not depreciated until the related assets are placed in service. Capitalized software is amortized over its depreciable life when it is ready for its intended use and placed in service.

Split-Interest Agreements

NAS recognizes its remainder interest in charitable gift annuities when the agreement is signed and assets are received from the donor. Periodically, NAS pays a fixed amount of the assets to the beneficiary designated by the donor. Upon termination of an annuity agreement, the remainder interest in the assets, if any, is available for use by NAS as net assets with or without donor restrictions in accordance with the respective donor's stipulation. At December 31, 2023 and 2022, NAS had charitable gift annuity assets of approximately $6.4 million and $5.5 million, respectively, which is included in other assets in the accompanying statements of financial position. At December 31, 2023 and 2022, $5.7 million and $4.7 million, respectively, of these assets were classified as Level 1 and $0.7 million and $0.8 million, respectively, were classified as Level 2 in the fair value hierarchy (as described in Note 3). NAS has recorded a liability of approximately $3.3 million at both December 31, 2023 and 2022, representing the present value of estimated future cash payments to annuitants based on the annuitants' life expectancies and other relevant factors, which is included in other current liabilities and other long-term liabilities in the accompanying statements of financial position.

Revenue Recognition

NAS generates revenues principally from: (i) contracts and grants; (ii) contributions; and (iii) fees and publications.

Contracts and Grants

The majority of NAS activities are performed under cost-reimbursable contracts and grants with the U.S. government and private entities. These contracts and grants are for various activities performed by NAS, including studies and workshops, as well as the administration of fellowship programs. The U.S. Department of Transportation accounted for 40% and 41% of NAS' total government contracts and grants revenue during the years ended December 31, 2023 and 2022, respectively.

NAS recognizes government and private contracts and grants as either contributions or exchange transactions, depending on whether the transaction is reciprocal or nonreciprocal. For contributions, revenue is recognized when a contribution becomes unconditional. Typically, contract and grant agreements contain a right of return or right of release from obligation provision and NAS has limited discretion over how funds transferred should be spent. As such, NAS recognizes revenue for these conditional contributions when the related barrier(s) has been overcome.

For contracts and grants treated as exchange transactions, NAS has a right to consideration from the sponsoring organization in an amount that corresponds directly with the value to the sponsoring organization of NAS' performance completed to date (costs incurred). For these agreements, NAS recognizes revenue in the amount to which NAS has the right to invoice. NAS has elected the practical expedient not to disclose information about unsatisfied performance obligations. Of the total government contracts and grants, approximately 13% and 18% were considered exchange transactions for the years ended December 31, 2023 and 2022, respectively. Of the total private contracts and grants, approximately 21% and 17% were considered exchange transactions for the years ended December 31, 2023 and 2022, respectively.

Contracts and grants are generally invoiced monthly for recoverable costs incurred in the preceding month. Contracts receivable consisted of $29.5 million of billed receivables and $48.9 million of unbilled receivables, as of December 31, 2023, respectively. Contracts receivable consisted of $19.3 million of billed receivables and $31.1 million of unbilled receivables, as of December 31, 2022, respectively. Receivables related to revenue from exchange contracts and grants is included in contracts receivable, net in the accompanying statements of financial position. As of December 31, 2023 and 2022, NAS was owed $11.6 million and $12.5 million, respectively, on these exchange contracts and grants. As of December 31, 2021, NAS was owed $14.1 million on receivables related to revenue from exchange contracts and grants.

Allowances for credit losses are recorded for exchange contracts and grants based upon management's judgment and analysis using relevant available information, from internal and external sources, relating to past events, historical credit loss, current conditions, and reasonable and supportable forecasts. At December 31, 2023 and 2022, NAS had an allowance for credit losses for exchange contracts and grants of $0.5 million and $0.8 million, respectively, which is reported net of contracts receivable in the accompanying statements of financial position. For contracts and grants treated as contributions, allowances are recorded for estimated uncollectible amounts based upon management's judgment and analysis of the creditworthiness of the sponsoring organization, past collection experience, and other relevant factors. At December 31, 2023 and 2022, respectively, NAS has an allowance for estimated uncollectible contracts and grants treated as contributions of $1.0 million and $1.5 million, respectively, which is reported net of contracts receivable in the accompanying statements of financial position.

For contracts and grants treated as contributions, NAS had $342.4 million and $276.7 million in unrecognized conditional contributions as of December 31, 2023 and 2022, respectively. The revenue related to these awards is conditioned on NAS incurring allowable expenditures under the terms of the agreements.

Contributions

Contributions, including unconditional promises to give, are recognized as revenues in the period received. Conditional promises to give are not recognized until all conditions are satisfied.

Contributions with donor-imposed restrictions are released when a restriction expires, that is, when the stipulated time period has elapsed, when the stipulated purpose for which the resource was restricted has been fulfilled, or both. For restricted contributions that were initially classified as conditional, NAS has elected to recognize the revenue in net assets without donor restrictions if the restriction is met in the same period that the revenue is recognized.

Revenues from non-federal grants qualifying as contributions are recorded by NAS upon notification of the grant award and satisfaction of all conditions, as applicable. Such grants are classified as net assets with donor restrictions when use of the grant funds is limited to specific areas of study or is restricted for use in future periods.

Gifts of land, buildings, or equipment are reported as net assets without donor restrictions unless explicit donor stipulations specify how the donated assets must be used. Donor restrictions on gifts that must be used to acquire or construct long-lived assets are released in the period in which the assets are acquired and placed in service.

Allowances are recorded for estimated uncollectible receivables based upon management's judgment and analysis of the creditworthiness of the donor, past collection experience, and other relevant factors. Contributions to be received after one year are discounted at an appropriate rate commensurate with the risks involved. Amortization of the discount is recorded as additional contribution revenue and is used in accordance with donor-imposed restrictions, if any.

In addition to the conditional contributions related to contracts and grants noted above, NAS had $3.2 million and $1.7 million in unrecognized conditional contributions as of December 31, 2023 and 2022, respectively. The contributions are conditioned on the awarding of a prize, holding various workshops, and conducting certain outreach activities.

Fees and Publications

NAS publishes a weekly multidisciplinary scientific journal (the Proceedings of the National Academy of Sciences, or "PNAS"), as well as reports and other publications. Subscription fees are paid in advance, and revenue from PNAS subscriptions is recognized over the subscription period, which is typically one calendar

year. Page fees, paid by contributors to PNAS when their article has been accepted for publication, are recognized when the article is published.

Since the contracts for fees and publications have an original expected duration of one year or less, NAS has elected the practical expedient and not disclosed the value of unsatisfied performance obligations and expected timing for completion related to fees and publications.

Meetings

NAS holds a number of meetings throughout the year for which it collects revenue in the form of registration and exhibitor fees, the largest of which is the Transportation Research Board Annual Meeting. Revenue related to these meetings is recognized when the meeting occurs and the associated performance obligations have been fulfilled. Revenue related to these meetings totaled $9.3 million and $6.8 million for the years ended December 31, 2023 and 2022, respectively, and is reflected in other income in the accompanying statements of activities.

Since the contracts for meetings have an original expected duration of one year or less, NAS has elected the practical expedient and not disclosed the value of unsatisfied performance obligations and expected timing for completion related to meetings.

Deferred Revenue and Advances

For both federal and non-federal grants and contracts that are determined to be exchange transactions, revenue is recognized in the amount to which NAS has the right to invoice. Funds received in advance of being earned for these grants are recorded as deferred revenue and advances in the accompanying statements of financial position. Similarly, funds received in advance of being earned for conditional contributions are recorded as deferred revenue and advances in the accompanying statements of financial position.

As of December 31, 2023 and 2022, NAS had $28.0 million and $34.9 million in deferred revenue, respectively, for contracts and grant determined to be exchange transactions. Of the $34.9 million in deferred revenue as of December 31, 2022, $11.3 million was recognized in revenue during the year ended December 31, 2023. Of the $33.4 million in deferred revenue as of December 31, 2021, $10.5 million was recognized in revenue during the year ended December 31, 2022. Other changes in the balances of deferred revenue and advances were caused by normal timing differences between the satisfaction of performance obligations and payment received from the sponsoring organizations.

For PNAS subscriptions, any subscription revenue received in advance of the subscription year is recorded as deferred revenue and advances in the accompanying statements of financial position. For PNAS subscriptions, $2.9 million in deferred revenue as of December 31, 2022 was recognized as revenue during the year ended December 31, 2023 and $2.7 million in deferred revenue as of December 31, 2021 was recognized as revenue during the year ended December 31, 2022.

For meetings, any cash received in advance of the meeting taking place is recorded as deferred revenue and advances in the accompanying statements of financial position. For meetings, $6.1 million in deferred revenue as of December 31, 2022 was recognized as revenue during the year ended December 31, 2023 and $4.9 million in deferred revenue as of December 31, 2021 was recognized as revenue during the year ended December 31, 2022.

Deferred revenue and advances consist of the following as of December 31, 2023 and 2022 (in thousands):

	2023	2022
Advances from private grants and contract sponsors	$ 41,021	$ 38,635
Advances from U.S. government sponsors	19,688	30,894
Meetings and publication subscriptions	9,397	9,005
Total deferred revenue and advances	$ 70,106	$ 78,534

Income Taxes

NAS follows guidance that clarifies the accounting for uncertainty in tax positions taken or expected to be taken in a tax return, including issues relating to financial statement recognition and measurement. This guidance provides that the tax effects from an uncertain tax position can only be recognized in the financial statements if the position is "more-likely-than-not" to be sustained if the position were to be challenged by a taxing authority. The assessment of the tax position is based solely on the technical merits of the position, without regard to the likelihood that the tax position may be challenged.

NAS is exempt from federal income tax under Internal Revenue Code ("IRC") Section 501(c)(3), though it is subject to tax on income unrelated to its exempt purpose, unless that income is otherwise excluded by the IRC. NAS has processes presently in place to maintain its tax-exempt status; to identify and report unrelated income; to determine its filing and tax obligations in jurisdictions for which it may have a nexus; and to identify and evaluate other matters that may be considered tax positions. NAS has determined that there are no material unrelated business activities or uncertain tax positions that require recognition or disclosure in the accompanying financial statements.

Functional Allocation of Expenses

NAS' primary program services include providing consensus advice, convening experts, managing, and administering research and analysis activities, promoting the scientific enterprise, and providing oversight of boards and committees. Natural expenses attributable to more than one functional expense category are allocated using a variety of cost allocation techniques, such as square footage and time and effort.

	2023 (in thousands)			
	Programs	Management and General	Fundraising	Total Expenses
Salaries and benefits	$ 129,734	$ 40,196	$ 3,153	$ 173,083
Grants, prizes, and awards	67,541	263	-	67,804
Subcontracts	45,336	-	-	45,336
Professional fees	15,135	10,818	136	26,089
Occupancy, depreciation, amortization, and interest	12,104	12,820	144	25,068
Travel	13,543	1,445	106	15,094
Information technology	6,841	962	221	8,024
Conferences, conventions, and meetings	5,014	2,589	169	7,772
Printing and publications	6,074	624	138	6,836
Other	1,273	3,138	6	4,417
Total expenses	$ 302,595	$ 72,855	$ 4,073	$ 379,523

	2022 (in thousands)			
	Programs	Management and General	Fundraising	Total Expenses
Salaries and benefits	$ 118,121	$ 38,745	$ 2,653	$ 159,519
Grants, prizes, and awards	66,430	107	-	66,537
Subcontracts	51,686	-	-	51,686
Occupancy, depreciation, amortization, and interest	11,735	9,162	122	21,019
Professional fees	12,074	8,634	99	20,807
Travel	7,960	990	124	9,074
Printing and publications	7,403	1,012	135	8,550
Information technology	5,731	1,028	92	6,851
Conferences, conventions, and meetings	3,112	2,373	109	5,594
Other	2,657	1,035	65	3,757
Total expenses	$ 286,909	$ 63,086	$ 3,399	$ 353,394

Risks and Uncertainties

NAS invests in various investment vehicles. Investment vehicles are exposed to various risks, such as interest rate, market, and credit risks. Due to the level of risk associated with these investments, it is at least reasonably possible that changes in the values of investments will occur in the near-term and that such changes could materially affect the amounts reported. NAS maintains its cash and cash equivalents in various bank accounts and money market funds that, at times, may exceed federally insured limits. NAS' cash and cash equivalents have been placed with high credit quality financial institutions. NAS has not experienced, nor does it anticipate, losses with respect to such accounts.

Use of Estimates

The preparation of these financial statements in conformity with U.S. generally accepted accounting principles requires management to make certain estimates and assumptions. These estimates and assumptions may affect the reported amounts of assets and liabilities and disclosures in the financial statements. Actual results could differ from those estimates.

Recently Adopted Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("CECL"). The FASB has subsequently issued additional guidance amending certain aspects of the measurement of CECL. The new guidance has replaced the incurred loss methodology of recognizing credit losses on financial instruments with a methodology that estimates the expected credit loss on financial instruments and reflects the net amount expected to be collected on the financial instrument. NAS adopted Topic 326 as of January 1, 2022, using the modified retrospective basis.

NOTE 3 - INVESTMENTS AND FAIR VALUE MEASUREMENTS

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. FASB Accounting Standards Codification ("ASC") Section 820 establishes a fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard describes three levels of inputs that may be used to measure fair value:

Level 1 - Quoted prices in active markets for identical assets or liabilities.

Level 2 - Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The following discussion describes the valuation methodologies used for financial assets measured at fair value. The techniques utilized in estimating the fair values are affected by the assumptions used, including discount rates and estimates of the amount and timing of future cash flows. Care should be exercised in deriving conclusions about NAS' business, its value or financial position based on the fair value information of financial assets presented.

Fair value estimates are made at a specific point in time, based on available market information and judgments about the financial asset, including estimates of timing, amount of expected future cash flows, and the credit standing of the issuer. In some cases, the fair value estimates cannot be substantiated by comparison to independent markets. In addition, the disclosed fair value may not be realized in the immediate settlement of the financial asset. Furthermore, the disclosed fair values do not reflect any premium or discount that could result from offering for sale at one time an entire holding of a particular financial asset. Potential taxes and other expenses that would be incurred in an actual sale or settlement are not reflected in amounts disclosed.

The following methods, assumptions, and inputs were used to estimate the fair value of each class of financial instruments:

The carrying value of cash equivalents such as money market funds approximates fair value because of the short maturity of these investments. These amounts are included in Level 1 of the fair value hierarchy.

NAS' fixed maturity investments (bonds and notes) include U.S. Treasury securities, mortgage-backed securities, corporate bonds, and mutual funds that invest in these types of securities. Other than U.S. Treasury securities and mutual funds, these investments generally do not trade on a daily basis. The fair value estimates of such debt securities are based on prices provided by NAS' investment managers and custodian banks as of the reporting date. Both the investment managers and the custodian banks use a variety of pricing sources to determine market valuations. Each designate specific pricing services or indexes for each sector of the market based upon the provider's expertise. NAS' debt securities portfolio is highly liquid, which allows for a high percentage of the portfolio to be priced through pricing services. Accordingly, the estimates of fair value for such debt securities are included in Level 2 of the fair value hierarchy. The estimated values of U.S. Treasury securities and debt mutual funds are based on actively traded market prices and are, accordingly, included in the bonds and notes amount in Level 1 of the fair value hierarchy.

Fair values of exchange-traded equity securities and mutual funds that invest in equity securities have been determined by NAS from observable market quotations on major trade exchanges. Accordingly, such equity securities are disclosed in Level 1 of the fair value hierarchy.

Fair values of futures contracts are based on the most recent available closing quotations on an exchange. Accordingly, such futures contracts are disclosed in Level 1 of the fair value hierarchy.

The reported fair value of alternative investments, including private equity securities and hedge funds, is based on the alternative investment fund managers' net asset value ("NAV") per ownership interest. Private equity investments are comprised of limited partnership interests or shares of funds characterized as corporations. Valuations provided by alternative investment fund managers include estimates, appraisals, assumptions, and methods that are reviewed by management. When necessary, NAS adjusts NAV for contributions and distributions subsequent to the latest NAV valuation date when calculating fair value. NAS analyzes the NAVs provided by alternative investment fund managers on a regular basis considering relevant economic and market conditions, applicable benchmarks and its understanding of the nature and related risks of the investments. These investments are not leveled in the fair value hierarchy.

Investments are held for the following purposes as of December 31, 2023 and 2022 (in thousands):

	2023	2022
Program pool investments	$ 61,595	$ 55,676
Gulf Research Program investments	467,600	453,983
Long-term investment pool, including endowment assets	645,519	594,342
Other investments	65,199	93,391
	$ 1,239,913	$ 1,197,392

The following table presents NAS' fair value hierarchy for those assets measured at fair value on a recurring basis at December 31, 2023 (in thousands):

	Total	Level 1	Investments Measured at NAV
Investments:			
Cash equivalents	$ 23,234	$ 23,234	$-
Bonds and notes:			
U.S. treasuries/government bonds	328,281	328,281	-
Equity:			
U.S. large equity	256,756	256,756	-
Non-U.S. equity (developed)	6,553	6,553	-
Non-U.S. equity (emerging)	2,670	2,670	-
Index futures contracts	55	55	-
Long/short equity hedge funds	26,057	-	26,057
Hedge fund investments	421,672	-	421,672
Private equity funds	168,299	-	168,299
Total		$ 617,549	$ 616,028
Cash held for investment and receivables	6,336		
Total investments	$ 1,239,913		

The following table presents NAS' fair value hierarchy for those assets measured at fair value on a recurring basis at December 31, 2022 (in thousands):

	Total	Level 1	Investments Measured at NAV
Investments:			
Cash equivalents	$ 23,584	$ 23,584	$ -
Bonds and notes:			
U.S. treasuries/government bonds	342,301	342,301	-
Equity:			
U.S. large equity	261,043	261,043	-
Non-U.S. equity (developed)	12,332	12,332	-
Non-U.S. equity (emerging)	5,602	5,602	-
Index futures contracts	2,248	2,248	-
Long/short equity hedge funds	24,321	-	24,321
Hedge fund investments	369,994	-	369,994
Private equity funds	144,200	-	144,200
Total	1,185,625	$ 647,110	$ 538,515
Cash held for investment and receivables	11,767		
Total investments	$ 1,197,392		

The National Academies' Corporation ("TNAC", see Note 14), a related entity, invests certain of its assets in NAS investment pools. TNAC investments participate in the investment pools proportionally with all other funds in the pools.

The NAS obligation to TNAC for these funds held in trust, which totaled $13.2 million and $12.6 million as of December 31, 2023 and 2022, respectively, is reported as funds held on behalf of others in the accompanying statements of financial position. The funds held on behalf of others liability equals the investments held in NAS' investment pools on behalf of TNAC.

The following table presents the nature and risk of assets with fair values estimated using NAV held at December 31, 2023 and 2022 (in thousands):

	As of December 31, 2023				
	NAV	Unfunded Commitments	NAV as of December 31, 2022	Redemption Frequency	Redemption Notice Period
Long/short equity hedge funds - U.S. large equity [(a)]	$ 26,057	N/A	$ 24,321	Monthly	60 days
Hedge fund - multi-strategies multi-vehicle [(b)]	421,672	$ 3,084	369,994	Monthly/Quarterly Annually	30/60/75/90/ 120/365 days
Private equity - Asia [(c)]	24,648	327	27,123	N/A	N/A
Private equity - Global [(d)]	138,344	150,407	112,982	N/A	N/A
Private equity - Domestic [(e)]	5,307	4,265	4,095	N/A	N/A
Total	$ 616,028	$ 158,083	$ 538,515		

(a) This category relates to long-short equity hedge funds comprised of equity investments. Each of these funds buys investments long and sells short with the ability to use leverage. These funds can also invest in derivative instruments such as forward, futures, and option contracts.

(b) This class includes investments in multi-strategy, multi-vehicle hedge funds with the objective of maximizing long-term, risk-adjusted returns, and capital appreciation by investing in securities, investment funds, discretionary accounts, and investment partnerships across a broad range of marketable and alternative asset classes. Asset classes include domestic and international marketable equity securities, hedged equity, real estate, natural resource, fixed income, and private equity and absolute return strategies, primarily focused in the United States. Approximately 5% of this asset class is not redeemable and distributions are received through liquidation of the underlying assets of the funds.

(c) This class includes several private equity funds that invest in equity, debt, or debt-oriented instruments, primarily in privately held companies, which own or contractually control operating entities located in the People's Republic of China and India. Investments held in India primarily include equity securities of "early to early growth stage" companies in multiple sectors, except real estate. These investments can never be redeemed with the funds. Instead, the nature of the investments in this class is that distributions are received through liquidation of the underlying assets of the funds. It is estimated that the underlying assets of the funds will be liquidated over one to two years. Approximately 10% of this asset class is in liquidation.

(d) This class includes several global private equity funds with diverse portfolios consisting primarily of venture capital funds, leveraged buyout funds, midstage growth capital funds, assets of healthcare companies, and international private equity funds. These investments are focused on several industries including, but not limited to, insurance, services, and consumer-related industries. These investments can never be redeemed with the funds. Instead, the nature of the investments in this class is that distributions are received through liquidation of the underlying assets of the funds. For funds for which the timing of liquidation of the underlying assets has been communicated, it is estimated that the underlying assets of the funds will be liquidated over three to ten years. For two funds in this category, the timing of liquidation has not been communicated. Approximately 3% of this asset class is in liquidation.

(e) This class includes one domestic private equity fund, which invests in publicly and privately held securities. These investments are focused in early-stage drug discovery companies. These investments can never be redeemed with the fund. Instead, the nature of the investments in this class is that distributions are received through liquidation of the underlying assets of the fund. It is estimated that the underlying assets of the fund will be liquidated over eight years.

NOTE 4 - CONTRIBUTIONS RECEIVABLE, NET

Contributions not yet collected are included in contributions and other receivables, net (current) and contributions receivable, net (long-term) in the accompanying statements of financial position, and mature as follows (in thousands):

	2023	2022
Less than one year	$ 18,720	$ 16,844
One to five years	3,345	6,196
Thereafter	122	180
	22,187	23,220
Less:		
Discount at rates ranging from 0.43% to 7.25%	(103)	(226)
Allowance for uncollectible contributions	(1,109)	(370)
	20,975	22,624
Less: current portion	(17,611)	(16,474)
Total contributions receivable, net, long-term	$ 3,364	$ 6,150

NOTE 5 - PROPERTY AND EQUIPMENT, NET

Property and equipment as of December 31, 2023 and 2022 is comprised of the following (in thousands):

	2023	2022
Land	$ 29,586	$ 29,689
Furniture and equipment	27,029	27,317
Buildings and improvements	175,793	177,910
Capitalized software	4,896	10,149
Work in progress	1,282	646
Leasehold improvements	4,073	4,073
	242,659	249,784
Less: accumulated depreciation and amortization	(114,541)	(118,467)
Total property and equipment, net	$ 128,118	$ 131,317

Depreciation and amortization expense was $5.7 million and $5.8 million for the years ended December 31, 2023 and 2022, respectively.

During the year ended December 31, 2023, NAS sold property located in Woods Hole, Massachusetts for approximately $12.7 million. NAS recognized a gain on sale of approximately $12.5 million which is included as a component of other income in the accompanying statement of activities for the year ended December 31, 2023.

NOTE 6 - LINES OF CREDIT

NAS maintains an available line of credit from Wells Fargo, which bears interest at the Secured Overnight Financing Rate ("SOFR") plus 0.55% (5.93% and 4.85% as of December 31, 2023 and 2022, respectively) and expires on September 30, 2024. The available line of credit was $30 million on January 1, 2022 and decreased to $20 million on April 1, 2022. The available line of credit increased to $30 million on January 1, 2023 and decreased back to $20 million on April 1, 2023. The available line of credit increased to $30 million on September 29, 2023 where it will remain until the expiration on September 30, 2024.

NAS also maintains an available $20 million line of credit with TD Bank, N.A., which expires on October 31, 2025. This line of credit bears interest at SOFR plus 0.63% (6.01% and 4.93% as of December 31, 2023 and 2022, respectively).

NAS has pledged and granted to each bank a security interest in NAS' gross revenues.

As of December 31, 2023 and 2022, respectively, there was no balance outstanding on either line of credit. Interest expense related to the lines of credit for the years ended December 31, 2023 and 2022 totaled approximately $376,000 and $85,000, respectively.

NOTE 7 - FINANCIAL ASSETS AND LIQUIDITY

Financial assets available for general expenditure, that is, without donor or contractual restrictions limiting their use, within one year of the date of the statements of financial position, are comprised of the following as of December 31, 2023 and 2022 (in thousands):

	2023	2022
Financial assets:		
Cash and cash equivalents	$ 42,323	$ 43,519
Contracts receivable, net	78,350	50,405
Contributions and other receivables, net, current	23,687	23,773
Investments	1,239,913	1,197,392
	1,384,273	1,315,089
Plus: endowment fund appropriation for the following year	5,775	5,474
Less: those unavailable for general expenditures within one year, due to:		
Contractual or donor-imposed restrictions:		
Endowment funds	(503,300)	(464,959)
Funds restricted by donors through time or purpose restrictions	(594,183)	(585,679)
Internal designations	(52,304)	(47,638)
Funds held on behalf of others	(13,185)	(12,576)
	(1,162,972)	(1,110,852)
Financial assets available to meet cash needs for general expenditures within one year	$ 227,076	$ 209,711

NAS is substantially supported by cost reimbursable contracts and grants from federal and private sponsors, which includes indirect cost recovery (as further discussed in Note 11). A portion of private grants and other contributions carries donor restrictions. Because a donor's restriction requires resources to be used in a particular manner or in a future period, NAS must maintain sufficient resources to meet those

commitments to donors. Thus, certain financial assets may not be available for general expenditure within one year. As part of liquidity management, NAS has a practice to structure its financial assets to be available as its general expenditures, liabilities, and other obligations come due. In addition, NAS invests cash in excess of daily requirements in short- and long-term investments. In the event of an unanticipated liquidity need, NAS could draw upon $50 million of available lines of credit (as further discussed in Note 6). In addition, NAS has $52 million in internally designated funds, which are available for general expenditure with appropriate internal approval.

NOTE 8 - NET ASSETS WITH DONOR RESTRICTIONS

Net assets with donor restrictions are available for the following purposes as of December 31, 2023 and 2022 (in thousands):

	2023	2022
Subject to expenditure for specific purpose:		
Gulf Research Program	$ 471,670	$ 456,889
Other sponsored research and advisory programs	139,948	148,238
Prizes and awards	550	512
	612,168	605,639
Investment in perpetuity, including amounts above the original gift amount ($189,361 and $186,958 as of December 31, 2023 and 2022, respectively) which, once appropriated, are expendable to support:		
Other sponsored research and advisory programs	257,041	236,596
Prizes and awards	83,727	76,582
Woods Hole facility	8,609	8,079
General operations	153,923	144,022
	503,300	465,279
Total net assets with donor restrictions	$ 1,115,468	$ 1,070,918

Net assets were released from donor-imposed restrictions in satisfaction of the following purposes during the years ended December 31, 2023 and 2022 (in thousands):

	2023	2022
Purpose-restricted releases:		
Gulf Research Program	$ 45,336	$ 40,813
Other sponsored research and advisory programs	64,200	51,667
Prizes and awards	1,303	1,472
Woods Hole facility	339	322
	111,178	94,274
Time-restricted releases	6,139	5,699
Net assets released from restrictions	$ 117,317	$ 99,973

The Gulf Research Program net assets relate to two agreements between NAS and BP Exploration and Production, Inc. (“BP”) and Transocean Deepwater, Inc. (“Transocean”), which resulted from separate plea

agreements between those corporations and the federal government, related to the 2010 Deepwater Horizon disaster. In accordance with the agreements, NAS established a program in 2013 focused on human health and environmental protection in the Gulf of Mexico. BP paid $350.0 million over five years, and Transocean paid $150.0 million over four years, to fund this 30-year, $500.0 million program. The program funds, including all investment earnings thereon, will be expended by 2043.

NOTE 9 - ENDOWMENT

Endowment Assets

The NAS endowment consists of 138 individual funds established to support general operations, other sponsored research and advisory programs, prizes and awards, and the operations of the Woods Hole facility. The endowment solely comprises donor-restricted net assets. The investments of the endowment are included in the NAS investment pool, as described in Note 3.

Interpretation of Relevant Law

NAS has interpreted the District of Columbia Uniform Prudent Management of Institutional Funds Act of 2007 (the "Act") as requiring NAS, absent explicit donor stipulations to the contrary, to act in good faith and with the care that an ordinarily prudent person in a like position would exercise under similar circumstances in making determinations to appropriate for expenditure or accumulate endowment funds, taking into account both its obligation to preserve the value of the endowment and its obligation to use the endowment to achieve the purposes for which it was donated. NAS classifies as net assets with donor restrictions (a) the original value of gifts donated to its permanent endowment, (b) the original value of subsequent gifts to its permanent endowment, and (c) accumulations to its permanent endowment required by the applicable donor gift instrument. Appreciation on donor-restricted endowment funds is classified in net assets with donor restrictions until such amounts are appropriated for spending by the NAS Council in a manner consistent with the standard of prudence prescribed by the Act. In accordance with the Act, NAS considers the following factors in making a determination to appropriate investment funds attributable to donor-restricted endowments:

(1) The duration and preservation of its endowment fund;

(2) The purposes of the institution and its endowment fund;

(3) General economic conditions;

(4) The possible effect of inflation or deflation;

(5) The expected total return from income and the appreciation of investments;

(6) Other resources of the institution; and

(7) The investment policy of the institution.

Return Objectives and Strategies

NAS has adopted investment and spending policies for endowment assets that are designed to provide a predictable stream of funding to programs supported by its endowment while seeking to protect the real purchasing power of the assets from inflation. Accordingly, NAS has adopted guidelines which feature a commitment to minimizing volatility while maximizing risk-adjusted return.

NAS' spending policy limits the annual spending to 5% of the three-year average fair value of the participating funds in the endowment portfolio. This is consistent with NAS' objective to maintain the

purchasing power of the endowment assets held in perpetuity, as well as to provide additional real growth through new gifts and investment return.

Changes in endowment net assets for the years ended December 31, 2023 and 2022 are as follows (in thousands):

	2023	2022
Endowment net assets with donor restrictions, beginning of year	$ 465,279	$ 530,107
Investment return (loss), net	50,869	(54,356)
Contributions	2,489	4,119
Net amounts expended	(15,337)	(14,591)
Endowment net assets with donor restrictions, end of year	$ 503,300	$ 465,279

Funds with Deficiencies

From time to time, the fair value of assets associated with individual donor-restricted endowment funds may fall below the original value of the gift donated to the permanent endowment. Deficiencies of this nature are reported as net assets with donor restrictions. For funds with a fair value below the original value of the gift, annual spending may be limited at NAS' discretion until the fair value returns to the required level. At December 31, 2023, there were no endowment funds with a fair value below the original value of the gift. At December 31, 2022, there were three endowment funds with a fair value below the original value of the gift. These funds had an original gift value of $900,000 and a fair value of $861,000, resulting in a deficiency of $39,000. These deficiencies were primarily the result of unfavorable market fluctuations that occurred shortly after the investment of new contributions. Subsequent gains that restore the fair value of the assets of the endowment fund to the required level are classified as an increase in net assets with donor restrictions.

NOTE 10 - PROGRAM EXPENSES

Program expenses for the years ended December 31, 2023 and 2022 are summarized as follows (in thousands):

	2023	2022
Transportation Research Board	$ 79,735	$ 84,844
Policy and Global Affairs	57,923	59,958
Gulf Research Program	50,612	39,113
Health and Medicine	25,238	19,034
Earth and Life Studies	18,331	16,504
Engineering and Physical Sciences	17,268	15,096
Behavioral and Social Sciences and Education	16,302	15,237
Proceedings of the National Academy of Sciences	12,644	12,890
National Academy of Medicine Programs	10,788	9,462
National Academy of Sciences Programs	8,556	9,618
National Academy of Engineering Programs	2,337	2,678
National Academy Press	1,769	1,517
LabX	1,092	958
Total program expenses	$ 302,595	$ 286,909

NOTE 11 - RECOVERY OF INDIRECT COSTS

NAS receives indirect cost recovery on its federal contracts and grants. An overhead assessment is applied to direct salaries, accrued leave, fringe benefits, and services provided by outside contractors (e.g., temporary personnel agencies, consultants) on NAS property. A general and administrative assessment ("G&A") is applied to direct costs and overhead less subcontract costs and stipends. Therefore, both the overhead and G&A rates are applied to projects incurring direct salaries and other direct costs such as travel. If a program does not require direct salaries, such as a travel grant program, a subcontract/flow-through administration rate is applied. Certain off-site work (not performed on NAS property) is assessed reduced overhead rates.

NAS bills for indirect cost recovery throughout the year based on negotiated rates. At the end of each year, NAS compares actual expenses incurred in each of its cost pools to the amounts recovered based on its billing rates. The difference is recorded as its indirect cost carryforward. If NAS over recovers on its indirect costs during the year, a liability is recorded. If NAS under recovers, a receivable is recorded.

NAS has a cumulative net over-recovery of approximately $20.1 million and $25.7 million as of December 31, 2023 and 2022, respectively. The over-recovery is included in the deferred revenue and advances balance in the accompanying statements of financial position.

NOTE 12 - BUILDING PROJECT AND FINANCING

Building Project Revenue Bonds

In January 1999, the District of Columbia issued Series 1999A, Series 1999B, and Series 1999C tax-exempt revenue bonds in the aggregate amount of $130,960,000 on behalf of NAS. Proceeds from the sale of the revenue bonds financed the cost of the acquisition of 44,250 square feet of land and related construction of an office building, as well as to pay certain costs of issuing the bonds. This building consolidates most of NAS' program activities into one location.

In June 2008, the District of Columbia issued Series 2008A tax-exempt revenue bonds in the amount of $66,325,000 on behalf of NAS. The proceeds were used to refund the Series 1999B and Series 1999C revenue bonds, as well as to pay certain costs of issuing the bonds.

In April 2009, the District of Columbia issued Series 2009A tax-exempt revenue bonds in the amount of $57,500,000 on behalf of NAS. The proceeds were used to refund the Series 1999A revenue bonds, as well as pay certain costs of issuing the bonds.

In May 2010, the District of Columbia issued Series 2010A tax-exempt revenue bonds in the amount of $59,550,000 on behalf of NAS. These bonds were sold to finance the cost to restore the NAS headquarters building on Constitution Avenue in Washington, DC and to pay for certain costs of issuance. The restoration was completed in 2012.

In December 2012, NAS remarketed the Series 2008A and 2009A bonds as direct bank purchases. The Series 2008A bonds were purchased by Wells Fargo Municipal Capital Strategies LLC; the Series 2009A bonds were purchased by TD Bank, N.A. In May 2017, NAS refinanced the Series 2008A and Series 2009A bonds with the existing banks to extend the mandatory repurchase to May 2027, at which point NAS could renew the direct purchase agreements, remarket the bonds, or repurchase the bonds.

In December 2017, the District of Columbia issued Series 2017A tax-exempt revenue bonds in the amount of $52,760,000 on behalf of NAS. The proceeds were used to complete an advance refunding of a portion of the Series 2010A revenue bonds. The Series 2017A bonds were issued as direct bank purchases with Century Subsidiary Investments, Inc. III ("Century Bank"), which was acquired by Eastern Bankshares ("Eastern Bank") in November 2021.

In August 2019, NAS remarketed the Series 2008A bonds. $38,100,000 of the bonds were purchased by TD Bank, N.A. and $19,000,000 of the bonds were purchased by Century Bank, which was acquired by Eastern Bank in November 2021. The bonds held by TD Bank, N.A. have a mandatory repurchase date of July 31, 2034, at which point NAS could renew the direct purchase agreement, remarket the bonds, or repurchase the bonds. The bonds held by Eastern Bank mature April 1, 2040 and do not have a mandatory repurchase date.

NAS is obligated under the revenue bonds as follows (in thousands):

	2023	2022
Series 2008A revenue bonds, term, at flexible rates (4.2% in 2023 and 2.6% in 2022), maturing at various dates from January 1, 2023 through 2043	$ 51,790	$ 53,165
Series 2009A revenue bonds, term, at flexible rates (4.0% in 2023 and 1.8% in 2022), maturing at various dates from January 1, 2023 through 2049	39,210	40,585
Series 2017A revenue bonds, term, at flexible rates (5.8% in 2023 and 2.2% in 2022), maturing at various dates from April 1, 2023 through 2040	45,040	47,285
Total bonds, at face value	136,040	141,035
Less: debt issuance costs	(1,223)	(1,357)
Total bonds payable	134,817	139,678
Less: current portion (included in other current liabilities)	(5,070)	(4,995)
Bonds payable, long-term	$ 129,747	$ 134,683

The serial and term bonds represent unsecured general obligations of NAS. Interest on the 2008A, 2009A, and 2017A bonds is payable monthly.

Scheduled maturities are as follows (in thousands):

Years Ending December 31,	
2024	$ 5,070
2025	5,160
2026	5,265
2027	5,375
2028	5,755
Thereafter	109,415
	$ 136,040

Interest expense on the bonds payable for the years ended December 31, 2023 and 2022 totaled $6.3 million and $3.2 million, respectively.

Interest-Rate Swaps

In May 2009, NAS entered into a swap agreement as a result of a counterparty exercising a swaption related to the Series 1999A Revenue Bonds. The variable-to-fixed swap requires NAS to pay 5.00% on a

notional amount of $55 million and to receive a floating rate equal to 0.11% plus 67% of the SOFR daily reset compounded in arrears, plus 0.41%.

NAS entered into this variable-to-fixed swap agreement in order to preserve the synthetic variable rate achieved through a previous swap agreement once the fixed-rate Series 1999A bonds were refunded with the variable-rate Series 2009A bonds.

NAS recorded a gain on the change in the fair value of the swap of approximately $312,000 and $2.2 million for the years ended December 31, 2023 and 2022, respectively, which is included in other income in the accompanying statements of activities. The fair value of the swap is recorded as a liability of approximately $771,000 and $1.1 million as of December 31, 2023 and 2022, respectively, and is included in other current liabilities and other long-term liabilities in the accompanying statements of financial position.

The fair value of the swap is determined using pricing models based on observable market data such as prices of instruments with similar maturities and characteristics, interest rate yield curves, and measures of interest rate volatility. The value was determined after considering the potential impact of collateralization and netting agreements, adjusted to reflect nonperformance risk of both the counterparty and NAS. Accordingly, the interest-rate swap is included in Level 2 of the fair value hierarchy.

NOTE 13 - EMPLOYEE BENEFITS

Retirement Plans

NAS has a noncontributory defined-contribution retirement plan covering substantially all of its employees (based on certain benefit eligibility requirements). The funding vehicles under the plan consist of group investments issued by Teachers Insurance and Annuity Association (“TIAA”) and College Retirement Equities Fund (“CREF”), (known collectively as “TIAA”), as well as mutual funds issued by TIAA, Vanguard Fiduciary Trust Company, and other third parties. Participants in this plan vest immediately. NAS has received a favorable determination letter from the Internal Revenue Service on the qualification of this plan under Section 401(a) of the IRC.

In addition, NAS has a voluntary employee contribution retirement plan that is funded solely by employee contributions made on a pretax salary-reduction basis under Section 403(b) of the IRC. The funding vehicles under the plan consist of group investments issued by TIAA and CREF, as well as mutual funds issued by TIAA, Vanguard Fiduciary Trust Company, and other third parties.

Pension expense for the years ended December 31, 2023 and 2022 amounted to $15.2 million and $13.9 million, respectively. NAS’ policy is to fund pension benefits as they are earned. NAS’ normal retirement age is 62, but there is no mandatory age for retirement.

Deferred Compensation

NAS has a 457(b) plan (“457(b) Plan”) to provide deferred compensation to employees who meet or exceed a base compensation threshold that is set by NAS. NAS also holds investments as part of a prior and now frozen deferred compensation arrangement for certain employees. The fair value of investments held for the two plans totaled $3.3 million and $2.5 million as of December 31, 2023 and 2022, respectively, which is reported within other assets in the accompanying statements of financial position. The related obligation is included in accrued employee benefits in the accompanying statements of financial position. Deferred compensation investments are held in debt and equity mutual funds, as well as group investments issued by the plan custodian, which are valued using Level 1, Level 2, and Level 3 inputs (as further discussed in Note 3). As of December 31, 2023, $2,948,000, $68,000 and $234,000 were valued at Level 1, Level 2, and Level 3 of the fair value hierarchy, respectively. As of December 31, 2022, $2,331,000, $43,000 and $80,000 were valued at Level 1, Level 2, and Level 3 of the fair value hierarchy, respectively. The deferred compensation obligation to employees is equal to the fair value of the investments held.

Postretirement and Postemployment Benefits

NAS provides certain health and life insurance benefits for employees retired due to length of service. All benefit-eligible employees may become eligible for service retiree benefits if they reach age 60 while working for NAS and complete five years of service in a benefit-eligible status for medical and 10 years of service for life insurance benefits. In addition, certain health and life insurance benefits are provided for employees retired due to disability. A benefit-eligible employee may become eligible for disabled retiree benefits if deemed totally disabled under NAS' long-term disability insurance or if they are eligible for disability benefits from the Social Security Administration. Life insurance benefits are provided based on coverage at date of disability and health insurance may be continued if the disabled retiree had participated in an NAS health insurance plan for five years at the date of disability. Insurance companies whose premiums are determined on an experience-rated basis provide life and health insurance benefits for retirees. Medicare supplement insurance is not experience rated. The retiree welfare benefit plan (the "Plan") is contributory for health insurance purposes for employees who retired on or after January 1, 1992. Participant contributions for health insurance are based on a percentage of the monthly premium paid by NAS (from 25% to 100%). The participant contribution is also based on their date of retirement, length of service, and choice of health insurance carrier.

The funded status of the Plan is reported within other assets in the accompanying statements of financial position.

Postretirement changes other than net periodic benefit cost are as follows (in thousands):

	2023	2022
Net actuarial gain	$ (3,867)	$ (166)
Recognized prior service credit	8	8
Total	$ (3,859)	$ (158)

Items not yet recognized as a component of net periodic benefit cost at December 31, 2023 and 2022 are as follows (in thousands):

	2023	2022
Net actuarial (gain) loss	$ (2,839)	$ 1,028
Prior service credit	(25)	(33)
Total	$ (2,864)	$ 995

The following table presents the changes in benefit obligations, changes in plan assets, funded status, and the components of net periodic benefit cost for the years ended December 31, 2023 and 2022 (in thousands):

	2023	2022
Change in benefit obligation:		
Benefit obligation, beginning of year	$ 42,570	$ 55,537
Service cost	1,402	2,073
Interest cost	2,171	1,537
Actuarial loss (gain)	696	(15,179)
Benefits provided	(1,637)	(1,398)
Benefit obligation, end of year	45,202	42,570
Change in plan assets:		
Fair value of plan assets, beginning of year	59,001	67,624
Actual return (loss) on plan assets	8,334	(11,006)
Employer contributions	-	3,894
Benefits paid	(1,659)	(1,511)
Fair value of plan assets, end of year	65,676	59,001
Funded status (over funded)	$ 20,474	$ 16,431

	2023	2022
Components of net periodic benefit credit:		
Service cost	$ 1,402	$ 2,073
Interest cost	2,171	1,537
Expected return on plan assets	(3,771)	(4,007)
Recognized prior service credit	(8)	(8)
Net periodic benefit credit	$ (206)	$ (405)

During the year ended December 31, 2023, NAS recognized an actuarial loss of $696,000 primarily due to the 22 basis point decrease in the discount rate used to measure the Plan benefit obligation at December 31, 2023 as compared to December 31, 2022, updates to the trend rates, and the passage of time, offset by updates to claims costs and retiree contribution rates. During the year ended December 31, 2022, NAS recognized an actuarial gain of $15.2 million primarily due to the 241 basis point increase in the discount rate used to measure the Plan benefit obligation at December 31, 2022 as compared to December 31, 2021, offset by updates to the trend rates and passage of time.

The assumptions used to determine net periodic benefit cost for the years ended December 31, 2023 and 2022 are as follows:

	2023	2022
Discount rate	5.22%	2.81%
Expected long-term return on plan assets	6.50%	6.00%
Rate of increase in healthcare costs:		
Under age 65	6.47%	5.46%
Over age 65	5.74%	5.13%

The assumptions used to calculate the accumulated postretirement benefit obligation as of December 31, 2023 and 2022 are as follows:

	2023	2022
Discount rate	5.00%	5.22%
Rate of increase in healthcare costs for next year:		
Under age 65	7.18%	6.47%
Over age 65	6.70%	5.74%

The trend rate for growth in healthcare costs was assumed to decline gradually beginning in 2024 to 4.00% by the year 2049.

NAS postretirement benefit plan asset allocations at December 31, 2023 and 2022, by asset class, are as follows:

	2023	2022
Cash	2%	2%
Bonds and notes	52	50
Equity	46	48
	100%	100%

The investment objective of the plan is to produce a rate of return over the long-term that will provide for fund growth, protect against the effect of inflation, and provide for some stability in different market environments. The fund is diversified between fixed income and equity investments. With this diversification and investment in broader market funds, there is reasonable assurance that no single security or class of securities will have a disproportionate impact on plan assets. Plan assets are invested with a long-term growth with reduced volatility strategy.

The overall long-term rate of return was developed by estimating the long-term real rate of return for the plan's asset mix, while taking into account the effects of inflation. This estimate was developed by evaluating the history of investments with similar asset allocations.

The following table presents the fair value hierarchy for the postretirement benefit plan assets at December 31, 2023 (in thousands):

		Fair Value Measurements Using	
	Total	Level 1	Level 2
Financial assets:			
Retiree Welfare Benefit Plan investments:			
Cash equivalents	$ 1,287	$ 1,287	$ -
Bonds and notes:			
U.S. treasuries/government bonds	23,272	23,272	-
Corporate bonds	10,572	10,572	-
Non-U.S. fixed income	29	-	29
Equity:			
U.S. large equity	21,825	21,825	-
Non-U.S. equity (developed)	8,688	8,688	-
Total		$ 65,644	$ 29
Cash held for investment	3		
Total investments	$ 65,676		

The following table presents the fair value hierarchy for the postretirement benefit plan assets at December 31, 2022 (in thousands):

		Fair Value Measurements Using	
	Total	Level 1	Level 2
Financial assets:			
Retiree Welfare Benefit Plan investments:			
Cash equivalents	$ 1,421	$ 1,421	$ -
Bonds and notes:			
U.S. treasuries/government bonds	18,915	18,915	-
Corporate bonds	10,459	9,903	556
Non-U.S. fixed income	29	-	29
Equity:			
U.S. large equity	19,413	19,413	-
Non-U.S. equity (developed)	8,514	8,514	-
Total		$ 58,166	$ 585
Cash held for investment	250		
Total investments	$ 59,001		

The methods and assumptions used to estimate the fair value of each class of financial instrument are further discussed in Note 3.

NAS does not expect to contribute to the Plan for 2024, as there is an actuarially determined net periodic credit for 2024 of approximately $366,000.

The following benefit payments, which reflect future services, are expected to be paid in future years as follows, as of December 31, 2023 (in thousands):

2024	$	2,193
2025		2,191
2026		2,275
2027		2,488
2028		2,627
2029-2033		15,450
	$	27,224

NOTE 14 - RELATED-PARTY TRANSACTIONS

National Academy of Engineering Fund

The National Academy of Engineering Fund ("NAEF") is a separately incorporated tax-exempt organization established by NAE to raise funds to support its goals. The financial activities and results of NAEF are not included in the NAS financial statements.

NAS performs certain activities in connection with fundraising by NAEF. NAS collected a total of $6.6 million and $3.9 million in 2023 and 2022, respectively, on behalf of NAEF. NAS disbursed $7.3 million and $4.2 million to NAEF from these collected amounts in 2023 and 2022, respectively. Amounts collected but not yet remitted to NAEF are included in other current liabilities in the accompanying statements of financial position.

TNAC

TNAC was separately incorporated in 1986 as a tax-exempt corporation for the purpose of constructing and maintaining a study and conference facility. This facility, the Arnold and Mabel Beckman Center, located in Irvine, California, operates to expand and support the general activities of NAS, NRC, NAM, and NAE. The financial position and results of TNAC are not consolidated in the NAS financial statements. NAS manages the operations of the Beckman Center. The amounts transferred from TNAC to NAS in 2023 and 2022 for Beckman Center operations totaled approximately $641,000 and $883,000, respectively.

NOTE 15 - COMMITMENTS AND CONTINGENCIES

Leases

NAS assesses contracts at inception to determine whether an arrangement is or includes a lease, which conveys NAS' right to control the use of an identified asset for a period of time in exchange for consideration. NAS is committed to one noncancelable operating lease for space, for which a right-of-use asset and a lease liability are recorded on the accompanying statements of financial position. The lease expires on March 31, 2026 and contains no renewal or termination options, or any restrictions or covenants. The lease contains no variable lease payments or residual value guarantees. The amount recognized as a right-of-use asset is included in other assets in the accompanying statements of financial position, while the related lease liability is included in other current liabilities and other long-term liabilities.

NAS has elected the practical expedient to forgo the recognition of short-term leases. NAS has one short-term lease for copiers and related support and is recognizing the payments on a straight-line basis over the lease term.

As of December 31, 2023 and 2022, the right-of-use asset and lease liability are as follows (in thousands):

	2023	2022
Operating lease right-of-use asset	$ 1,425	$ 2,006
Operating lease liability:		
Other current liabilities	$ 691	$ 653
Other long-term liabilities	918	1,609
	$ 1,609	$ 2,262

During the years ended December 31, 2023 and 2022, NAS had the following cash and non-cash activities associated with leases (in thousands):

	2023	2022
Cash paid for amounts included in the measurement of the lease liability:		
Operating cash flows from operating leases	$ 704	$ 683
Lease costs:		
Operating lease	$ 632	$ 632
Short-term lease	68	68
	$ 700	$ 700

The maturity of the lease liability under NAS' operating lease as of December 31, 2023 is as follows (in thousands):

Years Ending December 31,	Operating Leases
2024	$ 725
2025	746
2026	188
Total lease payments	1,659
Less: imputed interest	(50)
Total lease liability	$ 1,609

The amount of the right-of-use asset and lease liability were determined using a risk-free rate of 2.59%, based on the daily treasury yield on a seven-year note, which most closely approximated the remaining term of the lease at the date that the right-of-use asset and lease liability were recorded.

Contingencies

NAS receives a portion of its revenues directly or indirectly from federal government grants and contracts, all of which are subject to audit by the Defense Contract Audit Agency, which has completed its examinations through December 31, 2021. A contingency exists relating to unexamined periods and final settlements of examined periods to refund any amounts received in excess of allowable costs. Management is of the opinion that no material liability will result from such audits.

In the normal course of business, NAS may from time to time be subject to various claims and lawsuits. Certain lawsuits may be covered, in full or in part, by external insurance coverage. In the opinion of management, there are no lawsuits outstanding that would have a material adverse effect on the financial statements of NAS.

NOTE 16 - SUBSEQUENT EVENTS

NAS evaluated its December 31, 2023 financial statements for subsequent events through June 13, 2024, the date the financial statements were issued. NAS is not aware of any subsequent events which would require recognition or disclosure in the accompanying financial statements.

UNIFORM GUIDANCE SUPPLEMENTARY INFORMATION

National Academy of Sciences

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS

For the year ended December 31, 2023
(in thousands)

Assistance Listing Agency Designation	Agency	Advisory and Research	Fellowship and Other Support of Scholars	Pass-through Funding	Funding to Subrecipients	Total
10.000	USDA - U.S. Department of Agriculture	$ 1,053	$ -	$ -	$ 38	$ 1,091
11.000	CMRC - Department of Commerce	4,511	2,180	-	86	6,777
12.000	DOD - Department of Defense	23,532	7,175	36	9	30,752
14.000	HUD - Housing and Urban Development	51	-	-	-	51
15.000	INTR - Department of the Interior	1,650	-	23	-	1,673
16.000	JUST - Department of Justice	364	-	-	-	364
17.000	DOL - Department of Labor	227	-	-	-	227
19.000	STAT - Department of State	1,913	152	68	270	2,403
20.000	DOT - Department of Transportation	42,215	234	756	37,268	80,473
21.000	TRSY - Department of the Treasury	27	-	-	-	27
39.000	GSA - General Services Administration	36	-	-	-	36
43.000	NASA - National Aeronautics and Space Administration	7,677	-	-	1,011	8,688
47.000	NSF - National Science Foundation	17,289	-	140	288	17,717
64.000	VA - Department of Veterans Affairs	3,151	-	-	300	3,451
66.000	EPA - Environmental Protection Agency	2,389	-	9	52	2,450
81.000	DOE - Department of Energy	6,913	-	1	8	6,922
84.000	EDUC - Department of Education	10	-	-	-	10
91.000	GAO - U.S. Government Accountability Office	289	-	-	-	289
93.000	DHHS - Department of Health and Human Services	21,151	-	1,056	324	22,531
95.000	EXOF - Executive Office of the President	69	-	-	-	69
96.000	SSA - Social Security Administration	2,838	-	-	-	2,838
97.000	DHS - Department of Homeland Security	1,154	-	-	-	1,154
98.000	AID - U.S. Agency for International Development	3,291	330	-	3,718	7,339
	Total Expenditures of Federal Awards	$ 141,800	$ 10,071	$ 2,089	$ 43,372	$ 197,332

The accompanying detailed schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
Function: Advisory and Research Activities:					
USDA - U.S. Department of Agriculture:					
USDA	59-0204-0-003	Standing Committee on Evidence Synthesis, and Communications in Diet and Chronic Disease Relationships	$ 98	$ -	$ 98
USDA	59-8040-0-001	Food Forum	1	-	1
USDA	59-0204-1-005	Review of Dietary Reference Intakes for Energy	2	-	2
USDA	59-0204-1-006	Standing Committee on Review of the Dietary Reference Intake Framework	114	-	114
USDA	59-8040-2-001	Food Forum	16	-	16
USDA	AP23AC000000G003	Contingency Planning and Training Personnel Rule Workshop	12	-	12
USDA	12319821C0003	Study on the Dietary Guidelines for Americans, 2020-2025	26	-	26
USDA	123A9422P0004	Food Forum	10	-	10
USDA	123A9423P0005	Food Forum	9	-	9
USDA	12318723C0003	2023 Transportation Research Board Membership	12	-	12
USDA	58-3AEU-0-0073	CNSTAT Core Support	10	-	10
USDA	2022-77036-38343	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	54	-	54
USDA	2022-70425-38670	Exploring Linkages Between Soil Health and Human Health	479	-	479
USDA	1232SB18P0128	Applying Behavioral Economics to Policy	14	-	14
USDA	1232SB18P0128	Federal Facilities Council	5	-	5
USDA	2021-38831-34202	Government-University-Industry Research Roundtable Core Activities and the Federal Demonstration Partnership	15	38	53
USDA	12639522P0420	Renewal Subscription for TSD	12	-	12
USDA	12639521P0174	Titanium Titan Level Annual Meeting	13	-	13
USDA	12319823C0010	Alcohol and Health	138	-	138
USDA	12639523P0332	2023-2024 TSD Global Membership	13	-	13
		Total USDA - U.S. Department of Agriculture:	1,053	38	1,091
CMRC - Department of Commerce:					
CMRC	1333LB21D00000003/1333LB21F00000121	Evaluate the Quality of the 2020 Census	520	-	520
CMRC	1333LB21D00000003/1333LB21F00000111	Core Support for the Committee on National Statistics	393	-	393
CMRC	1333LB21D00000003/1333LB21F00000248	Roadmap for Disclosure Avoidance in the Survey of Income	487	-	487
CMRC	UNNUMBERED	Mapping Science Committee - Spring Meeting and Funding Support	42	-	42
CMRC	1331L523P13210008	CNSTAT Core Activities	58	-	58
CMRC	NA19OAR4310224	Ocean Studies Board and Board on Atmospheric Sciences and Climate in Support of NOAA's Missions 2019-2024	559	-	559
CMRC	WC133R17CQ0031/1305M319FNRMA0231	Action Collaborative on Addressing Sexual Harassment in Higher Education	16	-	16
CMRC	WC133R17CQ0031/1305M320FNRMA0052	UN Decade of Ocean Science for Sustainable Development: U.S. National Committee and Engagement Coordination Center	83	-	83
CMRC	WC133R17CQ0031/1305M321FNRMA0112	Space Weather Roundtable	12	-	12
CMRC	WC133R17CQ0031/1305M321FNRMA0163	Heliophysics Decadal Survey Program Support	308	86	394
CMRC	UNNUMBERED	Federal Facilities Council - FY 2022	11	-	11
CMRC	NA22NOS0080222	Marine Board General Program Support 2022-2023	31	-	31
CMRC	1305M322DNRMA0003/1305M322FNRMA0121	Study on the Equitable Distribution of Fisheries Management Benefits - Phase 1	286	-	286
CMRC	1305M322DNRMA0003/1305M322FNRMA0189	Probable Maximum Precipitation Modernization	431	-	431
CMRC	1305M322DNRMA0003/1305M323FNRMA0213	Roundtable on Plastics	20	-	20
CMRC	1305M322DNRMA0003/1305M323FNRMA0221	Study on Diversity, Equity, Inclusion, Belonging, Accessibility, and Justice in the U.S. Ocean Studies Community	1	-	1
CMRC	NA23NOS0080314	Marine Board General Program Support 2023-2024	25	-	25
CMRC	60NANB20D131	Forum on Cyber Resilience	23	-	23
CMRC	60NANB21D111	Support for the Core Activities and Workshops of CSTB	86	-	86
CMRC	SB134117CQ0017/1333ND21FNB190206	Technical Assessment of the Capital Facility Needs of the NIST	81	-	81
CMRC	SB134117CQ0017/1333ND22FNB100006	Assessment of the Technical Quality of the NIST Communications Technology Laboratory	44	-	44
CMRC	SB133411CQ0017/133ND22FNB10014	Supporting Parents and Caregivers in SEM	47	-	47
CMRC	60NANB22D156	Forum on Cyber Resilience, NIST	23	-	23
CMRC	SB134117CQ0017/1333ND23FNB100012	Assessment of PML, MML, and NCNR	775	-	775
CMRC	SB134117CQ0017/1333ND23FNB100052	Workshop, Workplace Safety in a Hybrid Work Environment	127	-	127
CMRC	1333ND23DNB100003/1333ND24FNB100003	Assessment of ITL and EL of the NIST	22	-	22
		Total CMRC - Department of Commerce:	4,511	86	4,597

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOD - Department of Defense:					
DOD	FA9550-19-1-0330	The Decadal Survey in Astronomy and Astrophysics 2020 (ASTRO 2020)	$ 24	$ -	$ 24
DOD	FA9550-22-1-0214	2022, 2023 & 2024 U.S. Frontiers of Engineering Symposia	52	-	52
DOD	FA9550-22-1-0535	Digital Twin Study	21	-	21
DOD	FA9550-22-1-0529	Decadal Survey for Solar & Space Physics 2024-33	24	-	24
DOD	FA9550-23-1-0408	Partial Support of the Committee on Atomic Molecular & Optical Science	8	-	8
DOD	FA9550-23-1-0650	The U.S.-Africa Frontiers Program: Catalyzing Collaborations in Science, Engineering, and Medicine	31	-	31
DOD	FA9550-16-D-0001/FA8650-20-F-9312	Adapting to Shorter Time Cycles: A Workshop Series for the United States Air Force	52	-	52
DOD	FA9550-16-D-0001/FA8650-20-F-9314	Advanced Battle Management System Technology Workshop	181	-	181
DOD	FA955016D0001/FA8650-21-F-9309	Federal Communication Commission Order 20-48 Study	12	-	12
DOD	W912EP-21-2-0001	Independent Scientific Review of Everglades Restoration Progress	494	-	494
DOD	UNNUMBERED	Core Support for the Marine Board Program	95	-	95
DOD	W912HZ22P0003	Benefits, Applications and FFP Opportunities of Natural Infrastructure: A Workshop	70	-	70
DOD	W912HQ22P0137	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	72	-	72
DOD	W912HQ23P0071	Federal Facilities Council	48	-	48
DOD	W911NF-17-1-0330	Applying Behavioral Economics to Policy	155	-	155
DOD	HQ003420C0180	Risk Analysis for Nuclear War and Nuclear Terrorism	322	-	322
DOD	W911NF-18-D-0002/W911NF20F0052	National Science, Technology and Security Roundtable	1,058	-	1,058
DOD	W911NF-18-D-0002/W911NF20F0053	Board on Army Research and Development	30	-	30
DOD	HQ003421C0044	Infusing Advanced Manufacturing Study	119	-	119
DOD	HQ003421C0097	Strategies for Responding to WMD Terrorism	600	-	600
DOD	W81XWH22C0033	Forum on Traumatic Brain Injury	135	-	135
DOD	W81K0419D0026/W81K0422F0207	Toxicology and Related Scientific Services	110	-	110
DOD	HQ0034-22-C-0100	Global Microelectronics: Semiconductor Partnership Models	443	-	443
DOD	N00014-23-1-2108	AI for Scientific Discovery: Toward an International Grand Challenge - A Workshop	213	-	213
DOD	W911NF-18-D-0002/W911NF23F0013	Transformative Science and Technology for the Department of Defense: Standing Committee and Seminar Series	160	-	160
DOD	W911NF-18-D-0002/W911NF23F0005	The Development of a Plan to Promote Defense Research at Historically Black Colleges and Universities and Other Minority Institutions	269	-	269
DOD	W911NF-23-1-0022	Adult Learning in the Military Context	235	-	235
DOD	HT001123P0060	NASEM Medical and Public Health Preparedness Forum	51	-	51
DOD	HT940223C0003	DOD Comprehensive Autism Care	331	9	340
DOD	HR00112310002	Enhancing the Assurance and Nimbleness of Large-Scale Integrated Software-Based Systems	154	-	154
DOD	HQ00342310017	Standing Committee on Biotechnology	52	-	52
DOD	W81K0419D0026/W81K0423F0244	Toxicology Support Services	26	-	26
DOD	W911NF-23-1-0409	Standing Committee on Defense Materials, Manufacturing and Infrastructure	10	-	10
DOD	W9133L20P2500	DEPS BICE Federal Facilities Council Membership Dues 2020	26	-	26
DOD	W9133L20P2500	DEPS BICE Federal Facilities Council Membership Dues 2020	22	-	22
DOD	FA955016D0001/FA8650-21-F-9322	Space Service Acquisition Executive Meeting of Experts	110	-	110
DOD	FA955016D00001/FA8650-21-F-9323	Testing and Evaluating Artificial Intelligence Workshop & Study	339	-	339
DOD	FA239622D0007/FA239622F0269	2022-2023 Managing Council	506	-	506
DOD	FA805123C0001	Titanium Affiliate Membership in TRB	25	-	25
DOD	FA239622D0007/FA239623F0029	DAF 2022-2023 S&T Roundtable	267	-	267
DOD	FA239622D0007/FA239623F0098	DAF Capability Development Planning Roundtable	47	-	47
DOD	W81XWH-17-2-0034	AMRMC Resident Research Associateship Program	23	-	23
DOD	W81XWH-17-2-0039	Associate Support for WRAIR	140	-	140
DOD	W81XWH-17-2-0031	Associate Support for USAMRIID	16	-	16
DOD	W81XWH-17-2-0033	Associate Support for USAISR	10	-	10
DOD	W911NF-18-D-0002, TO# 1	Board on Army Research and Development	798	-	798
DOD	W911NF-19-1-0037	Support for Activities of the NRC Board on Human-Systems Integration	24	-	24
DOD	W911NF-19-2-0142	Army Research Office Resident Research Associateship Program	793	-	793
DOD	W911NF-19-2-0186	Army Research Laboratory Resident Research Associateships Program	638	-	638
DOD	W911NF-18-D-0002/W911NF19F0060	Dissemination of the Finding of the National Academies Report: Minority Serving Institutions: America's Underutilized Resource for Strengthening the STEM Workforce	111	-	111
DOD	W911QX20C0008	Army Research Laboratory Technical Assessment Board (ARLTAB)	792	-	792
DOD	W911NF-18-D-0002/W911NF20F0016	National Study on Defense Research At Historically Black Colleges and Universities and Other Minority Institutions	263	-	263

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOD - Department of Defense (Continued):					
DOD	W911NF-18-D-0002/W911NF22F0012	Confucius Institutes at U.S. Institutions of Higher Education	$ 329	$ -	$ 329
DOD	UNNUMBERED	Army COE Core Support	81	-	81
DOD	W911NF-23-D-0002/W911NF-23-F-0032	BOARD on Army Research and Development	755	-	755
DOD	W911NF23D0002/W911NF23F0012	Review of the Small Business Innovation Research and Small Business Technology Transfer Programs at the Department of Defense	256	-	256
DOD	N68936-19-2-0001	Naval Air Warfare Center Weapons Division Resident Research Associateships Program	110	-	110
DOD	N00189-16-G-Z001/N0018920F0612	Naval Studies Board Support 2020-2021	82	-	82
DOD	UNNUMBERED	Marine Board General Program Support, 2022-2023	12	-	12
DOD	UNNUMBERED	Federal Facilities Council - FY 2022	48	-	48
DOD	N00014-23-D-4001/N00014-23-F-4003	Government-University-Industry Research (GUIRR) and Federal Demonstration Partnership (FDP)	73	-	73
DOD	UNNUMBERED	Marine Board General Program Support 2023-2024	7	-	7
DOD	H98230-20-D-0049, DO #1	National Security Agency Research Associateship Program	190	-	190
DOD	N00173-21-2-C004	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	8,287	-	8,287
DOD	2020-20011300401-001	ONDI/DS&T Indefinite Delivery Indefinite Quantity Deep Expertise Support - Task Order 1 - Persistent Engagement	867	-	867
DOD	2020-20011300401-003	Applying Behavioral Economics to Policy	2	-	2
DOD	2020-20011300401-005	Biotechnology Capabilities and Intelligence Needs	373	-	373
DOD	2020-20011300401-004	National Academies Climate Security Roundtable	699	-	699
DOD	2020-20011300401-006	Forum on the Revolution in Intelligence Affairs	199	-	199
DOD	10003697-2021	Membership for Government-University-Industry Research Roundtable	80	-	80
DOD	N00014-17-D-4001/N00014-18-F-7006	Marine Board of the National Academies - General Program Support - ONR	3	-	3
DOD	N000142212819	Ocean Acoustics Education and Expertise	310	-	310
DOD	N000142312023	Diversity in Ocean Studies	50	-	50
DOD	N00014-23-1-2791	Addressing Naval Undersea Medicine Needs	88	-	88
DOD	N00014-23-D-4001/N00014-23-F-4004	ONR Marine Board Support Services 2023-2028	5	-	5
DOD	HU00012210001	Forum on Microbial Threats	19	-	19
		Total DOD - Department of Defense:	23,532	9	23,541
HUD - Housing and Urban Development:					
HUD	86614921C00003	Support for Core Activities of CNSTAT	51	-	51
		Total HUD - Housing and Urban Development:	51	-	51
INTR - Department of the Interior:					
INTR	140L0618C0052	Native Seed Assessment	8	-	8
INTR	140L0123P0014	NAS Low Volume Road Conference	15	-	15
INTR	140M0119D0001/140M0122F0036	Increasing Diversity, Equity, Inclusion, Belonging, Accessibility, and Justice (DEIBAJ) in the U.S. Ocean Studies Community	15	-	15
INTR	140M0119D0001/140M0121F0013	Wind Turbine Generator Impacts to Marine Vessel Radar	69	-	69
INTR	140E0122P0013	Marine Board Support	35	-	35
INTR	140M0119D0001/140M0122F0044	Maintain the Standing Committee for Advisory Services of a Scientific Nature: Committee on Environmental Science and Assessment for Ocean Energy Management (COSA)	56	-	56
INTR	140M0119D0001/140M0123F0010	Evaluation of Hydrodynamics Modeling and Implications for Offshore Wind Development	280	-	280
INTR	140M0119D0001/140M0123F0026	Maintain the Established Standing Committee for Advisory Services of a Scientific Nature	129	-	129
INTR	140M0119D0001/140M0124F0001	Committee on OSW Energy and Fisheries	5	-	5
INTR	140D0421P0229	DEPS BICE FFC Membership Dues 2021	31	-	31
INTR	140D0421P0228	Sponsorship of the Transportation Research Board (TRB) Core Programs	87	-	87
INTR	R23AC00414	Review of the Long-Term Operations of the Central Valley Project	176	-	176
INTR	140D0423C0099	Forum on Traumatic Brain Injury	14	-	14
INTR	140D0423C0125	Orphaned Wells Research Support	22	-	22
INTR	G21AC10302	Mapping Science Committee and Its Activities	3	-	3
INTR	G21AP10301	USGS Support of Ocean Studies Board	26	-	26
INTR	G21AC10353-00	Resilient America Roundtable	65	-	65
INTR	G21AP10440	Board on Earth Sciences and Resources and its Activities	175	-	175
INTR	G22AP00493	Geographical and Geospatial Sciences Committee and Its Activities	66	-	66
INTR	140G0123P0139	Meeting of Experts: Biodiversity and Climate Assessment	23	-	23
INTR	G23AC00316	A Review of Transmission and Geographic Spread of Chronic Wasting Disease in U.S. Cervid Populations	237	-	237

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
INTR - Department of the Interior (Continued):					
INTR	G23AC00345	Building Capacity to Meet Current and Future Challenges and Needs Facing the US Mineral Resources Workforce: A Workshop	$ 72	$ -	$ 72
INTR	G23AC00378-00	COSEG USGS 2023-2025	10	-	10
INTR	140G0123C0007	USGS Mineral Resources Program Consensus Study	31	-	31
		Total INTR - Department of the Interior:	1,650	-	1,650
JUST - Department of Justice:					
JUST	15PNIJ-22-GK-00032-NIJB	Funding Support for the Operations of CLAJ	228	-	228
JUST	15PNIJ-23-GG-04263-NIJB	Probabilistic DNA Technologies & Predictive Policing	56	-	56
JUST	15F06723C0001869	Uniform Crime Reporting Program	80	-	80
		Total JUST - Department of Justice:	364	-	364
DOL - Department of Labor:		Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics			
DOL	75D30121D11240/75D30122F00006	Standing Committee on Personal Protective Equipment for Workplace Safety and Health (COPPE)	196	-	196
DOL	75D30122P14187	Applying Behavioral Economics to Policy	8	-	8
DOL	75D30122P15127	Committee on Geological and Geotechnical Engineering	19	-	19
DOL	75D30123P17331	2023 NAS-CER	1	-	1
DOL	75D30123P17332	2023 NAS-COGGE	3	-	3
		Total DOL - Department of Labor:	227	-	227
STAT - Department of State:					
STAT	SISNCT22CA0011	Support for ISN/CTR Thread Reduction Activities	698	210	908
STAT	19AQMM21C0157	Countering High Consequence Pathogens Originating from Wet Markets	428	60	488
STAT	SISNCT22CA0063	Training Scientists to Anticipate and Counter Exploitation and Harmful Use of Innovations in Neuroscience	53	-	53
STAT	19AQMM21D0113/19AQMM22F3140	Jefferson Science Fellows at the U.S. Department of State	227	-	227
STAT	19AQMM21D0113/19AQMM22F3167	Per Diem and Administration for Jefferson Science Fellows	151	-	151
STAT	19AQMM21D0113/19AQMM22F3509	Per Diem and Administration for Jefferson Science Fellows	44	-	44
STAT	SISNCT22CA0069	Scientist Engagement Needs Assessment and Outreach for Vulnerable Scientists with Dual-Use Knowledge	133	-	133
STAT	19AQMM21D0113/19AQMM23F0089	Fellowship Support for John Leslie	43	-	43
STAT	SAQMIP23CA0033	Proof of Concept for Biosecurity Science and Technology Review International Advisory Body	62	-	62
STAT	SISNCT23CA0029	Biosecurity Engagement Program	6	-	6
STAT	SAQMIP23CA0206	Roundtable for Security Issues Related to Governance of Bioeconomy	49	-	49
STAT	SISNCT23CA0038	To Carry out the CTR Programming Under the CHIPS Act	19	-	19
		Total STAT - Department of State:	1,913	270	2,183
DOT - Department of Transportation:					
DOT	693JF71950001	National Academy of Sciences, Transportation Board/Marine Board	116	-	116
DOT	693JK418D800002L/693JK419F9800014	UTC Clearinghouse 2019-20	40	-	40
DOT	693JK320C000001	The Safe Transportation of Liquefied Natural Gas by Rail	1	-	1
DOT	693JK418D800001/693JK421F9850004	Repurposing Plastics Waste in Infrastructure	531	-	531
DOT	693JK418D80002L/693JK422F9850006	Data, Metrics and Analytic Methods for Assessing Equity	295	-	295
DOT	693JK418D800002L/693JK422F98511N	Transportation Resilience 2023	88	-	88
DOT	693JK418D800001/6913G622F50032N	VOLPE Center 2022-23 TRB Core Technical Support	19	-	19
DOT	693JK418D800001/693JK422F98516N	Office of Research and Technology/Bureau of Transportation Statistics Core Program Activities 2022-23	225	-	225
DOT	DC-26-7243	The Surface Transportation Extension Act of 2004	92	-	92
DOT	693JK418D800001/693JK423F96003N	2023 Transportation Research Board Annual Meeting	77	-	77
DOT	UNNUMBERED	2023 FTA and TAM Roundtable	15	-	15
DOT	693JJ318D000012/693JJ323F00036N	TRB 2023 International Road Weather Conference	10	-	10
DOT	693JK422D800010/693JK423F85003N	E.U.-U.S. Transportation Research Symposium 2024	37	-	37
DOT	693JK418D800001	Volpe Center 2023-24 TRB Core Technical Support	6	-	6
DOT	693JJ323D000023/693JJ32300206N	Stormwater Management Best Practices	122	-	122
DOT	693JK423D800002 / 693JK423F96020N	Research Clearinghouse for the University Transportation Centers Program	9	-	9
DOT	693JK422D800010/693JK423F85007N	Forum on Accelerating Transformative Tech in Transportation System	5	-	5
DOT	693JK423D800002/ 693JK423F85006N	BTS Support for TRB's Core Program Activities for 2023-24	75	-	75

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOT - Department of Transportation (Continued):					
DOT	DTFAWA-12-A-80008	ACRP - Airport Cooperative Research Program	$ 6,005	$ 8,442	$ 14,447
DOT	693KA9-21-T-00011	Emerging Safety Trends in Aviation	655	-	655
DOT	693KA9-22-T-0002	Human Intervention Motivation Study (HIMS) and Flight Attendant Drug and Alcohol (FADAP) Study	590	-	590
DOT	693KA9-22-P-00042	TRB Core Program	43	-	43
DOT	693KA9-23-T-00006	COE on the Implementation of Improvements to TARAM	69	-	69
DOT	693KA9-23-C-00020	FAA Membership - Tri Core Program	19	-	19
DOT	DTFH61-13-H-00024	National Cooperative Highway Research Program (NCHRP)	296	6,133	6,429
DOT	693JJ31850017	Core Program Services for a Highway Research, Development and Technology Program	6,706	-	6,706
DOT	693JJ31950003	National Cooperative Highway Research Program	16,664	17,390	34,054
DOT	693JJ318D000012/693JJ319F000105	Performance Evaluation of FHWA's Research & Technology Programs	33	410	443
DOT	693JJ318D000012/693JJ319F000106	Research and Technology Coordination Committee (RTCC)	73	-	73
DOT	693JJ318D000012/693JJ319F000083	FHWA Infrastructure Research	51	520	571
DOT	693JJ318D000012/693JJ319F000158	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	129	-	129
DOT	693JJ32050001	Core Program Services for a Highway Research, Development and Technology Program	1,357	-	1,357
DOT	693JJ318D000012/693JJ320F000174	Applying Behavioral Economics to Policy	14	303	317
DOT	693JJ322P000007	Support for the Transportation Research Board Minority Student Fellows Program	13	-	13
DOT	693JJ322D000008/693JJ322F000085	FHWA Infrastructure Research and Technology Stakeholder Committees	14	-	14
DOT	693JJ318D000012/693JJ322F000088	Transitioning Evidence Based Road Safety Research into Practice	85	-	85
DOT	693JJ322D000008/ 693JJ322F00095N	LTIP Program 2022-2027 - Pavement Expert Task Group Committee Meetings	4	-	4
DOT	693JJ322D000008/ 693JJ322F00096N	LTIP Program 2022-2027 - Bridge Expert Task Group Committee Meetings	3	-	3
DOT	UNNUMBERED	FHWA/TFHRC Resident Research Associateship Pgm	1	-	1
DOT	693JJ323P000019	Preparing for Automated Vehicles and Shared Mobility	25	-	25
DOT	693JJ318D000012/693JJ323F00105N	13th TRB International Conference on Low Volume Roads 2023	50	-	50
DOT	693JJ323P000023	14th Conference on Transportation Asset Management	25	-	25
DOT	693JJ323D000023/693JJ323F00207N	Research and Technology Coordinating Committee (RTCC)	58	-	58
DOT	693JJ32350024	Core Program Services for a Highway Research, Development, and Technology Program	2,048	-	2,048
DOT	65310222C00003	Best Practices for the Efficient Supply of Chassis for Transporting Intermodal Containers	334	-	334
DOT	693JK418D800002/693JJ422F00040N	Impact of Driver Compensation on Safety and Retention	679	-	679
DOT	693JK418D800001/693JJ423F00006N	Federal Motor Carrier Safety Administration Transportation Research Board Core Technical Activities 2022-23	77	-	77
DOT	69A36520401600RRDDC	Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)	2	50	52
DOT	69A36521402810RRDDC	Rail Safety Innovations Deserving Exploratory Analysis	16	-	16
DOT	693JK418D800001/693JJ621F000051	FRA 2021-22 Support for TRB Core Program Activities	57	-	57
DOT	69A36522403530RRDDC	Rail Safety Innovations Deserving Exploratory Analysis	37	66	103
DOT	693JK418D800002/693JJ622F00028N	Impacts of Trains Longer Than 7,500 Feet	633	-	633
DOT	693JJ623P000019	FRA 2023-24 Support for TRB Core Technical Activities	21	-	21
DOT	DC-2018-013-00	FY2018 Transit Cooperative Research Program	3	56	59
DOT	DC-2019-004-00	Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)	10	201	211
DOT	DC-2020-008-00	Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)	28	510	538
DOT	DC-2021-018-00	FY2021 Transit Cooperative Research Program	123	921	1,044
DOT	DC-2022-007-00	FY2022 Transit Cooperative Research Program	2,452	638	3,090
DOT	DC-2022-020-01-00	Federal Transit Administration 2022-2023 TRB Core Technical Support	190	-	190
DOT	693JJ922P000036	Forum on Traumatic Brain Injury	43	-	43
DOT	693JK418D800001/693JJ922F00030N	NHTSA 2022-23 Core Program Sponsorship	123	-	123
DOT	693JJ922P000037	Forum on Medical and Public Health Preparedness for Disasters and Emergencies	46	-	46
DOT	DTNH22-08-H-00222	Assessment of Fuel Economy Technologies for Medium and Heavy-Duty Vehicles	170	-	170
DOT	693JJ923P000063	Forum on Traumatic Brain Injury	3	-	3
DOT	693JK423D800002/693JJ923F000239	NHTSA 2023-24 TRB Core Program Sponsorship	85	-	85
DOT	693JK321C000003	Study on Installation of Automatic or Remote-Controlled Shut-Off Valves	210	-	210
DOT	693JK321C000007	OPS Federal Sponsorship for TRB	80	-	80
		Total DOT - Department of Transportation:	42,215	35,640	77,855
TRSY - Department of the Treasury:					
TRSY	UNNUMBERED	IRS Core Support	27	-	27
		Total TRSY - Department of the Treasury:	27	-	27

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
GSA - General Services Administration:					
GSA	47PA0119P0024	Federal Facilities Council	$ 36	$ -	$ 36
		Total GSA - General Services Administration:	36	-	36
NASA - National Aeronautics and Space Administration:					
NASA	80HQTR19D0001/80HQTR19F0025	Committee to Advise the U.S. Global Change Research Program	295	-	295
NASA	80HQTR19F0101	Committee on Aerospace Medicine and the Medicine of Extreme Environments	75	-	75
NASA	NNH17CB02B/80HQTR20F0084	Vision and Voyages for Planetary Science in the Decade 2013 - 2022	244	-	244
NASA	80NSSC20K1479	Board on Earth Sciences and Resources and its Activities	122	-	122
NASA	NNH17CB02B/80HQTR21F0056	Foundation to Assess SMD Research Communities	6	-	6
NASA	NNH17CB02B/80HQTR21F0147	Space Weather Operations and Research Infrastructure Workshop, Phase II	7	-	7
NASA	NNH17CB02B/80HQTR21F0215	Space Weather Roundtable	1	-	1
NASA	80NSSC22PA166	Partial Support for Core Activities of the Board on Human-Systems Integration (BOHSI)	20	-	20
NASA	80HQTR19D0001/80HQTR22F0075	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	102	-	102
NASA	80NSSC22PB727	Federal Facilities Council BICE/FCC-BICE-NASA-2022	23	-	23
NASA	80HQTR22DA001/ 80HQTR22FA015	Applying Behavioral Economics to Policy	1,160	-	1,160
NASA	NNH17CB02B/80HQTR22F0051	Helio Decadal Survey	229	76	305
NASA	80HQTR22DA001/80HQTR22FA019	Committee on Space & Earth Studies and SSB Discovery Committees 2022-27	1,422	-	1,422
NASA	80HQTR22DA003/80HQTR22FA014	Space Technology Industry-Government-University Roundtable (STIGUR)	123	-	123
NASA	80HQTR22DA001/80HQTR22FA025	Decadal Survey on Biological and Physical Sciences Research in Space 2023-2032	743	117	860
NASA	80HQTR22DA003/80HQTR22FA026	Ongoing Support of the ASEB	439	-	439
NASA	80HQTR22DA003/80HQTR22FA026	Ongoing Support of the ASEB	7	-	7
NASA	80HQTR22DA003/80HQTR22FA034	Aeronautics Research and Technology Roundtable	61	-	61
NASA	80HQTR22DA003/80HQTR22FA033	Partial Support on the Committee on Radio Frequencies	227	-	227
NASA	80HQTR22DA001/80HQTR23FA004	Core Support for the Activities of the Board on Atmospheric Sciences and Climate in the Division on Earth and Life Studies	178	-	178
NASA	80HQTR22DA001/80HQTR23FA009	Core Support for the Activities of the Polar Research Board in the Division on Earth and Life Studies	143	-	143
NASA	80HQTR22DA003/80HQTR23FA007	Aviation Climate Impacts Meeting of Experts	66	-	66
NASA	80HQTR22DA001/80HQTR23FA005	Committee to Assess the NASA Science Activation Program	185	-	185
NASA	80HQTR22DA001/80HQTR23FA008	Policies and Practices for Supporting Family Caregivers	75	-	75
NASA	80HQTR22DA003/80HQTR23FA010	Mission Critical Workforce Infrastructure and Technology	557	-	557
NASA	80NSSC23PA390	Annual Operating Costs for NAS BBCSS	39	-	39
NASA	80HQTR22DA001/80HQTR23FA019	Space Weather Roundtable	27	-	27
NASA	80HQTR22DA001/80HQTR23FA021	DEPS/SSB/Earth Sciences Mid Decadal 2024	179	-	179
NASA	80HQTR22DA001/80HQTR23FA022	Decadal Strategy for Solar and Space Physics	586	818	1,404
NASA	80HQTR22DA001/80HQTR23FA020	Ocean Studies Board Core Support	65	-	65
NASA	80HQTR22DA003/80HQTR23FA058	Review of the Small Business Innovation Research and Small Business Technology Transfer Programs at NASA	91	-	91
NASA	80HQTR19D0001/80HQTR23F0056	Developing a Strategy to Evaluate the Fifth Nation	55	-	55
NASA	80NSSC23PC269	Federal Facilities Council Membership	25	-	25
NASA	80HQTR22DA001/80HQTR23FA063	High Priority Science Campaigns for Human Explorers on the Surface of Mars	64	-	64
NASA	80HQTR22DA001/ 80HQTR23FA062	Co-Production of Environmental Knowledge, Methods, and Approaches	36	-	36
		Total NASA - National Aeronautics and Space Administration:	7,677	1,011	8,688
NSF - National Science Foundation:					
NSF	SES-1560294	Partial Support for the Core Activities of the Committee on National Statistics	1,755	-	1,755
NSF	OISE-1663864	Enhancing U.S. Membership in the International Institute for Applied Systems Analysis (IIASA)	132	-	132
NSF	1729167	Leadership Support for Core Activities of the Board on Behavioral, Cognitive and Sensory Sciences	12	-	12
NSF	1760032	Decadal Assessment and Outlook Report on Biological Physics/Physics of Living Systems	2	-	2
NSF	EAR-1823050	Catalyzing Opportunities for Research in the Earth Sciences (CORES): A Decadal Survey for NSF's Division of Earth Sciences	36	-	36
NSF	DBI-1839674	Forum on Neuroscience and Nervous Systems Disorders	22	-	22
NSF	EEC-1840746	Sharing Exemplary Admissions Practices that Promote Diversity in Engineering	46	-	46
NSF	BCS-1853713	Geographical Sciences Committee and its Activities	18	-	18
NSF	CMMI-1916526	Corrosion of Buried Steel at New and In-Service Infrastructure	11	-	11
NSF	OISE-1917284	Advancing U.S. Science, Leadership, and Global Engagement in International Science Networks	1,224	2	1,226

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National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
NSF - National Science Foundation (Continued):					
NSF	CNS-1923245	Promising Practices for Improving the Recruitment, Retention and Advancement of Women of Color in Tech	$ 160	$ -	$ 160
NSF	1933193	Leadership Support for Activities of the Board on Science Education	225	-	225
NSF	OCE-1933374	Ocean Studies Board Activities in Support of NSF's Mission	12	-	12
NSF	1933974	Forum on Cyber Resilience, NSF	333	-	333
NSF	EAR-1933986	Board on Earth Sciences and Resources and its Activities	183	-	183
NSF	1937181	Support for the Core Research Activities and Studies of the Computer Science and Telecommunications Board, Core and Project Support	440	-	440
NSF	SMA-1946465	Science and Innovation Leadership for the 21st Century	11	-	11
NSF	49100419C0006	An Assessment of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs at the National Science Foundation	385	-	385
NSF	2011625	Partial Core Support of the Board on Physics and Astronomy	1	-	1
NSF	DUE- 2015899	Roundtable on Systemic Change and the Future of Undergraduate STEM Education	601	-	601
NSF	CHE-2016227	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	9	-	9
NSF	2022844	Advancing a Systems Approach to Studying the Earth: A Strategy for the National Science Foundation	376	-	376
NSF	2030149	Applying Behavioral Economics to Policy	243	-	243
NSF	2049851	Partial Support of the Committee on Radio Frequencies	33	-	33
NSF	2028849	Partial Support of the Condensed Matter and Materials Research Committee	67	-	67
NSF	2113842	Research at Multiple Scales: A Vision for Continental Scale Biology	330	-	330
NSF	2040016	Planetary Science and Astrobiology Decadal Survey 2023-2032	72	-	72
NSF	OIA-2050485	Addressing Diversity, Equity, Inclusion, and Anti-Racism in 21st Century STEM Organizations	201	-	201
NSF	2054501	Designing Materials to Revolutionize and Engineer our Future	160	-	160
NSF	BCS-2055602	Leadership Support for Core Activities of the Board on Environmental Change and Society	248	-	248
NSF	EFMA-2101725	Extraordinary Engineering Impacts: Seven Decades of Support from National Science Foundation	273	-	273
NSF	CHE-2106513	BCST and CSR Core Support	412	-	412
NSF	2148115	Space Weather Roundtable	53	-	53
NSF	OISE-2113484	Promoting and Enhancing the U.S. IIASA Network	171	-	171
NSF	DMS-2133303	BMSA Core Support	231	-	231
NSF	DRL-2113927	Equity in PreK-12 STEM Education	200	-	200
NSF	2114138	Core Support for Committee on Science, Engineering, Medicine and Public Policy	69	-	69
NSF	SES-2114583	Developing a Vision for a 21st Century National Data Infrastructure for Federal Statistics and Social and Economic Research	280	-	280
NSF	2114701	AccelNet-Implementation: PEER2PEER International Convergence Research Networks in Transboundary Water Security	195	154	349
NSF	CHE-2117300	Chemistry and Quantum Information Science	45	-	45
NSF	CHE-2117300	Chemistry and Quantum Information Science	31	-	31
NSF	ICER-2129515	RAPID: Leading Practices for Improving Accessibility and Inclusion in Field and Laboratory Science	9	-	9
NSF	OPP- 2132040	Technology/Developments to Advance Antarctic Research	4	-	4
NSF	IOS- 2135081	Strategic Initiatives on Animal Welfare Challenges in Research and Education on Wildlife, Non-Model Animal Species and Biodiversity	134	-	134
NSF	CMMI-2135084	Analysis of Causes of Failure and Collapse of the 305-Meter Telescope at the Arecibo in Puerto Rico	211	-	211
NSF	2138025	Core Support for the Federal Demonstration Partnership	174	32	206
NSF	2139091	Science for Judges - Development of the Reference Manual on Scientific Evidence, 4th Edition	324	-	324
NSF	2141337	Monitoring, Mitigating and Leveraging the Long-term Impact of COVID-19 on the Future Careers of Women in STEM: A Workshop	19	-	19
NSF	SES-2145655	Facilitating Rapid Responses to SBE-Related QuestionSEAN	936	100	1,036
NSF	2153298	Partial Support of the Committee on Astronomy and Astrophysics	190	-	190
NSF	2154341	National Science, Technology and Security Roundtable	35	-	35
NSF	FAIN-2153107	Understanding and Addressing Misinformation about Science	548	-	548
NSF	2202035	Decadal Survey on Solar & Space Physics 2024-33	290	-	290
NSF	EFMA-2205648	2022 Frontiers of Engineering Symposia (U.S. FOE, CHINA-America FOE, and E.U.-U.S. FOE)	1	-	1
NSF	2207773	Disability in STEM Ed and Workforce	587	-	587
NSF	2213343	Crime rates during the COVID-19 Pandemic	21	-	21
NSF	2218893	Activities of the Board on Atmospheric Science and Climate	453	-	453
NSF	DMR-2221890	A Transformational Africa-US STEM University Partnership: A Workshop	16	-	16
NSF	2227810	Understanding the Rules of Life Program: Accomplishments and Future Opportunities	220	-	220

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
NSF - National Science Foundation (Continued):					
NSF	2233022	Foundational Research Gaps and Future Directions for Digital Twins	$ 67	$ -	$ 67
NSF	2232737	Future Directions for Southern Ocean and Antarctic Nearshore and Coastal Research	546	-	546
NSF	BCS-2235390	Human Sciences Synthesis Workshop	34	-	34
NSF	2234156	The Current Status and Future Direction of High Magnetic Field Science in the United States, Phase II	406	-	406
NSF	2243601	Funding for CORE Activities of the Board on Life Science	208	-	208
NSF	2011811	The Committee on Geological and Geotechnical Engineering and its Activities	87	-	87
NSF	2235560	Policies and Practices for Supporting Family Caregivers in STEM: Advancing Inclusive Excellence in the Wake of the COVID-19 Pandemic	42	-	42
NSF	2217307	Partial Support of CNSTAT Core	182	-	182
NSF	2236687	2025-2035 Decadal Survey of Ocean Sciences for the NSF	444	-	444
NSF	2301869	Activities of the Polar Research Board	206	-	206
NSF	2316144	Artificial Intelligence Workshop	152	-	152
NSF	2316129	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics Travel Fellowship Program	30	-	30
NSF	2300262	Applying Behavioral Economics to Policy	157	-	157
NSF	2306544	Conference: 2023 Frontiers of Engineering Symposia (U.S. FOE, German-American FOE, Japan-America FOE and E.U.-U.S. FOE)	150	-	150
NSF	491000423C0013	Consensus Study on Promising PreK-12 STEM Education Innovations	278	-	278
NSF	DUE-2309335	Equitable and Effective Teaching in Undergraduate STEM Education	346	-	346
NSF	2325015	Conference Nobel Prize Summit 2023: Truth, Trust and Hope	50	-	50
NSF	49100423C0015	K-12 STEM Education and Workforce Dev. in Rural Areas	200	-	200
NSF	2241289	Advancing Geographical and Geospatial Science	44	-	44
NSF	BCS-2234961	BBCSS Core	93	-	93
NSF	2329910	2023 Quadrennial Review of the National Nanotechnology Initiative (NNI)	45	-	45
NSF	2330859	Developing Competencies for the Future of Data and Computing: The Role of K-12 Education	19	-	19
NSF	2320884	Water Science and Technology Board and Its Activities	21	-	21
NSF	2310763	Partial Support of the Committee on Atomic Molecular and Optical Sciences	2	-	2
		Total NSF - National Science Foundation:	17,289	288	17,577
VA - Department of Veterans Affairs:					
VA	36C24518D0171/36C24523N0613	Health Effects of Waste Related to Manhattan Project	191	-	191
VA	36C24518D0171/36C24523N0877	Sec. 507 Study on Toxic Exposures and Mental Health	71	-	71
VA	36C25024P0225	Forum on Microbial Threats	2	-	2
VA	36C24E20C0009	Forum on Neuroscience and Nervous System Disorders	64	-	64
VA	36C24E20C0008	Roundtable on Value & Science-Driven Health Care	50	-	50
VA	36C24520C0186	Reassessment of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry	45	-	45
VA	36C24520C0105	Global Forum on Innovation in Health Professional Education with Attendance at Forums and Annual Workshops	5	-	5
VA	36C24E20C0015	U.S. Department of Veterans Affairs Participation in Activities of the National Academies of Sciences Institute for Laboratory Animal Research	129	-	129
VA	36C24E20C0024 (36C24E20R0038)	Standing Committee for the Care and Use of Animals in Research & Workshop Hosting	386	-	386
VA	36C24E21C0011	Forum on Regenerative Medicine	31	-	31
VA	36C24E22P0005	Forum on Traumatic Brain Injury (TBI)	92	-	92
VA	36C24E22P0103	Transfer of the Air Force Health Study Data	186	-	186
VA	36C24E22C0030	Evaluate the Effects of Opioids and Benzodiazepines on All-Cause Mortality of Veterans	1,006	300	1,306
VA	36C24518D0171/36C24522N0611	Roundtable for the Promotion on Health Equity	50	-	50
VA	36C24518D0171/36C24522N0742	Suicide Risk in Veterans in Non-VA Healthcare Systems	223	-	223
VA	36C10X22C0062	Improving Access to High-Quality Mental Health Care for Veterans: A Workshop	206	-	206
VA	36C25022C0273	Forum on Microbial Threats	75	-	75
VA	36C24518D0171/36C24523N0197	Review of the Department of Veterans Affairs Presumption Decision Process	339	-	339
		VA - Department of Veterans Affairs:	3,151	300	3,451
EPA - Environmental Protection Agency:					
EPA	CR-83948401	EPA Resident Research Associateship and Summer Faculty Fellowship Program	39	-	39
EPA	68HERC19D0011/68HERC20F0328	Environmental Impacts of Currently Marketed Sunscreens	121	-	121

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
EPA - Environmental Protection Agency (Continued):					
EPA	68HERC19D0011/68HERC20F0314	Anticipatory Research for EPA's Research and Development Enterprise to Inform Future Environmental Protection: The Road Ahead	$ 163	$ -	$ 163
EPA	68HERC19D0011/68HERC20F0395	Emerging Science on Indoor Chemistry	39	-	39
EPA	68HERC19D0011/68HERC21F0010	Assessing Causality from a Multidisciplinary Evidence Base for National Ambient Air Quality Standards	7	-	7
EPA	68HERC19D0011/68HERC21F0178	Variability & Relevance of Mammalian Toxicity	302	52	354
EPA	68HERC19D0011/68HERC21F0203	Consensus Report on the Health Risks of Indoor Exposures to Fine Particulate Matter and Practical Mitigation Solutions	205	-	205
EPA	68HERC19D0011/68HERC21F0257	Consensus Report on Electric Arc Furnace Slag	515	-	515
EPA	68HERC19D0011/68HERC21F0401	Review of EPA's Draft Assessment Product - 2021	359	-	359
EPA	68HERC19D0011/68HERC22F0083	NAS Urban Sustainability Workshop	35	-	35
EPA	68HERC19D0011/68HERC22F0109	Children's Environmental Health: Future Priorities	70	-	70
EPA	68HERC19D0011/68HERC22F0091	NAS-TRB Core Support	73	-	73
EPA	68HERC19D0011/68HERC22F0299	Provisions of Scientific and Technical Expertise for Environmental Public Health Issue Workshops/Business Meetings	121	-	121
EPA	68HERC19D0011/68HERC22F0487	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	4	-	4
EPA	68HERC19D0011/68HERC23F0022	Integrating the Human Sciences to Scale Societal Response	21	-	21
EPA	68HERC19D0011/68HERC23F0055	Applying Behavioral Economics to Policy	239	-	239
EPA	68HERC19D0011/68HERC23F0506	Costs and Policies of Recycling Programs Report	76	-	76
		Total EPA - Environmental Protection Agency:	2,389	52	2,441
DOE - Department of Energy:					
DOE	DE-HS0000031	Support of Activities of the NAS in Relation to the Radiation Effects Research Foundation	1,654	-	1,654
DOE	DE-SC0019328	Partial Core Support of the Board on Physics and Astronomy	158	-	158
DOE	DE-SC0020665	Board on Earth Sciences and Resources & Its Activities	52	-	52
DOE	DE-FE0031572	NETL Resident Research Associateship and Summer Faculty Fellowship Program	7	8	15
DOE	DE-SC0020408	Partial Support of the Condensed Matter and Materials Research Committee	77	-	77
DOE	DE-SC0020446	Support for the Core Research Activities and Studies of the Computer Science and Telecommunications Board, DOE	81	-	81
DOE	89303019PMA000138	Federal Facilities Council	102	-	102
DOE	DE-SC0021079	Enhancing the U.S. Chemical Economy through Investments in Fundamental Research in the Chemical Sciences	44	-	44
DOE	DE-SC0021427	A Decadal Survey of Elementary Particle Physics	180	-	180
DOE	DE-EP0000026/89243220FNE400048	Merits and Viability of Different Nuclear Fuel Cycles and Technology Options and the Waste Aspects of Advanced Nuclear Reactors	44	-	44
DOE	DE-EP0000026/89233121FNA400329	A Decadal Assessment of High Energy Density Physics	85	-	85
DOE	89243321PEE000015	Energy Efficiency Renewable Energy Sustainable Transportation Office Support for Transportation Research Board	79	-	79
DOE	DE-SC0021898	Chemistry and Quantum Information Science	135	-	135
DOE	DE-SC0021652	Long-Term Strategy for Low -Dose Radiation	6	-	6
DOE	DE-EM0005239	Support for NRSB and its Activities (Waste Management and Environmental Restoration)	377	-	377
DOE	89233121DNA000035/89303021FOE400005	Net Metering in the Evolving Electricity System for the Office of Electricity	390	-	390
DOE	89233121DNA000035/89303022FFE400034	Committee on Earth Resources and its Activities 2021-22	25	-	25
DOE	DE-EP0000026/89303021FFE400026	Carbon Utilization Infrastructure, Markets, Research and Development	810	-	810
DOE	89233121DNA000035/89233122FNA400441	Potential Environmental Effects of Nuclear War	536	-	536
DOE	DE-SC0022878	Digital Twins Study	140	-	140
DOE	89233121DNA000035/89243422FEE400288	Smart Manufacturing Technology Development	575	-	575
DOE	DE-FG02-07ER15872	Board on Chemical Sciences and Technology	13	-	13
DOE	89233121DNA000035/89303023FTT400006	Assist DOE with the Identification of a Governing Board on the Foundation for Energy Security and Innovation	28	-	28
DOE	89233121DNA000035/89303023FOE400007	Maintaining and Enhancing Electricity System Operability and Reliability Research Services and Workshop	25	-	25
DOE	DE-SC0024153	Partial Support for the Committee on Atomic Molecular & Optical Science	4	-	4
DOE	89233121DNA000035/89243423FEE400346	Committee on Earth Resources and It's Activities	26	-	26
DOE	89233121DNA000035/89243123FSC400576	Conduct a Consensus Study of DOE SBIR/STTR Programs	23	-	23
DOE	DE-SC0024074	Board on Chemical Sciences and Technology and the Chemical Sciences Roundtable	8	-	8
DOE	DE-SC0024226	Board on Earth Sciences and Resources and Its Activities	61	-	61
DOE	89243323PEE000018	NETL Membership Forum on Preparing for Automated Vehicles and Shared Mobility Systems	6	-	6
DOE	DE-EP0000026/89233118FNA400038	U.S.-China Technical Dialogue on Nuclear and International Security 2018-2023	244	-	244
DOE	DE-EP0000026/89233118FNA400039	U.S.-India Technical Dialogue on Nuclear and International Security 2018-2023	380	-	380
DOE	DE-EP0000026/89233118FNA400040	U.S.-Russia Technical Dialogue on Nuclear and International Security 2018-2023	308	-	308
DOE	DE-EP0000026/89233120FNA400280	Review of Capabilities for Verification, Detection and Monitoring Nuclear Weapons & Fissile Materials	55	-	55

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DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
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Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOE - Department of Energy (Continued):					
DOE	DE-EP0000026/89233121FNA400371	Post-Exascale Computing Review for the NNSA	$ 175	$ -	$ 175
		Total DOE - Department of Energy:	6,913	8	6,921
EDUC - Department of Education:					
EDUC	91990023C0052	Active Shooter Drills	10	-	10
		Total EDUC - Department of Education:	10	-	10
GAO - U.S. Government Accountability Office:					
GAO	05GA0A21D0008/05GA0A23K0012	Expert Assistance	10	-	10
GAO	05GA0A21D0008/05GA0A23K0027	Precision Agriculture Technologies Meeting	26	-	26
GAO	05GA0A21D0008/05GA0A23K0034	Assessment of the Use of AI in Environmental Modeling of Wildfires, Severe Storms, Hurricanes and Flooding	34	-	34
GAO	05GA0A21D0008/05GA0A23K0041	Prevent Political Interference in Research at HHS	70	-	70
GAO	05GA0A21D0008/05GA0A23K0053	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	23	-	23
GAO	05GA0A21D0008/05GA0A23K0076	List of Experts on Domestic Violent Extremists Use of Social Media and Gaming Platforms	16	-	16
GAO	05GA0A21D0008/05GA0A23K0071	Applying Behavioral Economics to Policy	14	-	14
GAO	05GA0A21D0008/05GA0A23K0091	Environmental Challenges of Solar & Wind Energy MoE	45	-	45
GAO	05GA0A21D0008/05GA0A23K0133	Identification of Actions HHS Can Take to Improve Efforts to Efficiently Develop, Manufacture Equitably, Distribute, and Track Data from Nationwide Diagnostic Tests for Future Pandemics	30	-	30
GAO	05GA0A21D0008/05GA0A24K0005	GAO Oversight TO	5	-	5
GAO	05GA0A21D0008/05GA0A24K0011	GAO Meeting of Experts on Hanford HLW	16	-	16
		Total GAO - U.S. Government Accountability Office:	289	-	289
DHHS - Department of Health and Human Services:					
DHHS	HHSP233201400020B/75P00120F37103	Forum on Medical and Public Health Preparedness for Catastrophic Events	14	-	14
DHHS	75ACF121C00093	Policies and Programs to Reduce Intergenerational Poverty	231	-	231
DHHS	HHSP233201400020B/75P00120F37104	Forum on Aging, Disability, and Independence	47	-	47
DHHS	75Q80122P00015	Leadership Consortium: Collaboration for a Learning Health System	42	-	42
DHHS	75D30122P13183	Action Collaborative on Countering U.S. Opioid Epidemic	10	-	10
DHHS	75D30121D11240/75D30122F00003	Considerations for Returning Individual Genomic Results from Population-Based Surveys with a Focus on the National Health and Nutrition Examination Survey: A Workshop	130	-	130
DHHS	75D30121D11240/75D30122F00004	Feeding Interventions for Infants and Young Children under Age 2: Scoping of Promising Interventions to Implement at the Community or State-Level	463	-	463
DHHS	75D30121D11240/75D30122F00007	Personal Protective Equipment and Personal Protective Technology Product Standardization for a Resilient Public Health Supply Chain: A Workshop	205	-	205
DHHS	75D30121D11240/75D30122F00014	The Contribution of Cancer Genomics Information to Community Investigations of Unusual Patterns of Cancer: A Workshop	143	-	143
DHHS	75D30121D11240/75D30122F00008	Communicable Disease Response Plan Evaluation	9	60	69
DHHS	75D30121D11240/75D30122F00005	National Cancer Policy Forum	281	-	281
DHHS	75D30121D11240/75D30122F00010	Impact and Control of Valley Fever	29	-	29
DHHS	75D30121D11240/75D30122F00012	Forum on Mental Health and Substance Use Disorders	105	-	105
DHHS	75D30121D11240/75D30122F00009	The Public Health Infodemic and Trust in Public Health as a National Security Threat: A Workshop	279	-	279
DHHS	75D30121D11240/75D30122F00015	Technical Support Services for Environmental Health Matters Initiative	115	-	115
DHHS	75D30121D11240/75D30122F00013	Forum for Children's Well-Being: Promoting Children's Cognitive, Affective and Behavioral Health	170	-	170
DHHS	75D30121D11240/75D30122F00011	Forum on Microbial Threats	299	-	299
DHHS	75D30121D11240/75D30123F00016	Leadership Consortium 2023-2027 CDC Proposal	61	-	61
DHHS	75D30121D11240/75D30123F00017	NASEM Wastewater Surveillance Study	169	-	169
DHHS	75D30121D11240/75D30123F00018	Forum on Medical and Public Health Preparedness	25	-	25
DHHS	75D30121D11240/75D30123F00019	Standing Committee on Personal Protective Equipment	54	-	54
DHHS	75D30121D11240/75D30123F00020	Reusable Health Care Textiles (Workshop)	32	-	32
DHHS	75D30121D11240/75D30123F00022	COVID-19 Vaccine Safety Monitoring	25	-	25
DHHS	75D30121D11240/75D30123F00024	National Cancer Policy Forum	156	-	156
DHHS	75FCMC22P0039	Leadership Consortium: Collaboration for A Learning Health System	100	-	100
DHHS	75FCMC22P0038	Forum on Mental Health and Substance Use Disorders	51	-	51
DHHS	75FCMC23P0040	Leadership Consortium 2023 CMS Proposal	30	-	30

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DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

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(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DHHS - Department of Health and Human Services (Continued):					
DHHS	75FCMC23P0018	Forum on Advancing Diagnostic Excellence	$ 1	$ -	$ 1
DHHS	75A50120C00129	Committee on America's Medical Product Supply Chain Security	28	-	28
DHHS	75A50121C00061	Standing Committee on Emerging Infectious Diseases and 21st Century Health Threats	1,002	-	1,002
DHHS	HHSP233201400020B/75P00121F37112	Workshop on Suicide Prevention in American Indian/Alaska Native Communities	2	-	2
DHHS	HHSP233201400020B/75P00121F37110	Racial and Ethnic Health Inequities	745	-	745
DHHS	HHSP233201400020B/75P00121F37111	Innovative Data Science Approaches to Assess Suicide Risk in Individuals, Populations, and Communities: Current Practices, Opportunities and Risks A Workshop	2	-	2
DHHS	HHSP233201400020B/75P00122F37113	Forum on Traumatic Brain Injury	14	-	14
DHHS	HHSP233201400020B/75P00122F37114	Forum on Mental Health and Substance Use Disorders	50	-	50
DHHS	HHSP233201400020B/75P00123F37115	Forum on Mental Health and Substance Use Disorders	1	-	1
DHHS	HHSP233201400020B/75P00123F37116	Federal Policy Impacts on Child Poverty	23	-	23
DHHS	HHSP233201400020B/75P00123F37118	Breastfeeding Analysis	45	-	45
DHHS	HHSP233201400020B/75P00123F37117	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	73	-	73
DHHS	1R13FD005362-01	Forum on Neuroscience and Nervous System Disorders	138	-	138
DHHS	1R13FD006614-01	Applying Behavioral Economics to Policy	46	-	46
DHHS	5R13FD006967	ILAR Roundtable on Science and Welfare in Laboratory Animal Use	31	-	31
DHHS	1R13FD006897-01	Forum on Microbial Threats	29	-	29
DHHS	75F40120C00192	Food Forum	28	-	28
DHHS	1R13FD007302-01	Forum on Drug Discovery, Development, and Translation	100	-	100
DHHS	75F40121C00075	Review of Dietary Reference Intakes for Energy	1	-	1
DHHS	75F40122D00002/75F40122F19001	Benefits and Risks of Seafood Consumption Associated with Child Growth and Development	756	-	756
DHHS	75F40122D00002/75F40122F19002	Use of Meta-Analyses in Nutrition Research and Policy	173	-	173
DHHS	75F40122D00002/75F40123F19003	Challenges in Supply, Market Competition, and Regulation of Infant Formula in the United States	247	-	247
DHHS	75F40123C00077	Evaluating Rare Disease Drug Safety in the U.S. and E.U.	269	-	269
DHHS	1R13FD008016	Diagnosis and Treatment of Adult Attention-Deficit/Hyperactivity Disorder	80	-	80
DHHS	75F40122D00002/75F40123F19004	Protein Quality and Growth Monitoring Studies	37	-	37
DHHS	75F40122D00002/75F40123F19005	Forum on Temporomandibular	5	-	5
DHHS	75R60221D00002/75R60221F34002	Supporting Children with Disabilities: A Workshop	8	-	8
DHHS	75R60221D00002/75R60222F34005	Review of Relevant Literature Regarding Adverse Events Associated with Vaccines	1,081	-	1,081
DHHS	75R60221D00002/75R60222F34003	Forum for Children's Well Being	50	-	50
DHHS	75R60221D00002/75R60222F34004	Improving the Health & Wellbeing of Children & Youth-HCT	110	-	110
DHHS	75R60221D00002/75R60222F34006	Sustaining Essential Health Care Services Related to Intimate Partner Violence During Public Health Emergencies	853	-	853
DHHS	75R60221D00002/75R60223F34007	Membership Children's Well Being Forum	15	-	15
DHHS	75R60221D00002/75R60223F34008	Essential Women's Behavioral Health Services	22	-	22
DHHS	75H701-22-P-00007	Federal Facilities Council	10	-	10
DHHS	75H70423P00023	Federal Facilities Council Membership	10	-	10
DHHS	HHSN263201800029I/HHSN26300029	Partial Support for the Core Activities of the Committee on Population (CPOP)	87	-	87
DHHS	HHSN263201800029I/HHSN26300028	Partial Support for the Committee on National Statistics (CNSTAT)	100	-	100
DHHS	HHSN263201800029I/HHSN26300027	Partial Support for the Board on Behavioral, Cognitive, and Sensory Sciences (BBCSS)	93	-	93
DHHS	HHSN263201800029I/75N98021F00013	Structural Racism and Rigorous Models of Social Inequity	24	-	24
DHHS	HHSN263201800029I/75N98022F00009	Workshop on Population Aging and Social Research in Low-and Middle-Income Countries (LMIC)	260	-	260
DHHS	HHSN263201800029I/75N98022F00008	Aging in Place and Dementia Friendly Communities	213	-	213
DHHS	HHSN263201800029I/HHSN26300011	Forum on Microbial Threats	105	-	105
DHHS	HHSN263201800029I/HHSN26300010	Roundtable on Genomics and Precision Health	125	-	125
DHHS	HHSN263201800029I/HHSN26300007	Forum on Drug Discovery, Development, and Translation	133	-	133
DHHS	HHSN263201800029I/HHSN26300008	National Cancer Policy Forum	156	-	156
DHHS	HHSN263201800029I/HHSN26300023	Partial Support for the Food Forum	50	-	50
DHHS	HHSN263201800029I/HHSN26300003	Standing Committee on the Use of Emerging Science for Environmental Health Decisions	373	-	373
DHHS	HHSN263201800029I/HHSN26300019	Board on Research Data and Information	57	-	57
DHHS	HHSN263201800029I/HHSN26300012	Health Literacy Roundtable	25	-	25
DHHS	HHSN263201800029I/HHSN26300014	Core Support for the Board on Life Sciences	102	-	102
DHHS	HHSN263201800029I/HHSN26300018	Core Support for COSEMPUP	200	-	200
DHHS	HHSN263201800029I/HHSN26300020	Leadership Consortium for a Value & Science-Driven Health System	80	-	80

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DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

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Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DHHS - Department of Health and Human Services (Continued):					
DHHS	HHSN263201800029I/HHSN26300026	Forum for Medical & Public Health Preparedness for Disasters & Emergencies and Action Collaborative on Disaster Research Response	$ 259	$ -	$ 259
DHHS	HHSN263201800029I/HHSN26300025	Forum on Mental Health and Substance Use Disorders	51	-	51
DHHS	HHSN263201800029I/75N98019F00469	Forum on Neuroscience and Nervous System Disorders	445	-	445
DHHS	HHSN263201800029I/75N98019F00848	Forum on Aging, Disability, and Independence	20	-	20
DHHS	HHSN263201800029I/75N98019F00847	Forum on Regenerative Medicine	149	-	149
DHHS	HHSN263201800029I/75N98020F00025	Partial Support for the Core Activities of the Board on Health Care Services	98	-	98
DHHS	HHSN263201800029I/75N98020F00015	Partial Core Support for the National Science, Technology and Security Roundtable	64	-	64
DHHS	HHSN263201800029I/75N98020F00016	Standing Committee on Evidence Synthesis and Communications in Diet and Chronic Disease Relationships	164	-	164
DHHS	HHSN263201800029I/75N98020F00024	Partial Support for International Council of Laboratory Animal Science (ICLAS), Institute for Laboratory Animal Research (ILAR) Roundtable and ILAR Council	27	-	27
DHHS	HHSN263201800029I/75N98021F00005	FDP Compliance Unit Standard Procedure CUSP Repository	1	32	33
DHHS	HHSN263201800029I/75N98021F00016	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	59	202	261
DHHS	HHSN263201800029I/75N98021F00007	Dietary Reference Intakes for Energy	51	-	51
DHHS	HHSN263201800029I/75N98021F00015	Applying Behavioral Economics to Policy	82	-	82
DHHS	HHSN263201800029I/75N98021F00018	Nonhuman Primate Model Systems: State of the Science and Future Needs	453	-	453
DHHS	HHSN263201800029I/75N98021F00009	Use of Race, Ethnicity, and Ancestry as Population Descriptors in Genomics Research	505	-	505
DHHS	HHSN263201800029I/75N98021F00006	Roundtable on Black Men & Black Women in Science, Engineering and Medicine	161	-	161
DHHS	HHSN263201800029I/75N98021F00017	Partial Support of Government-University-Industry Research Roundtable (GUIRR) Core Activities 2021-2022	81	-	81
DHHS	HHSN263201800029I/75N98021F00010	Mechanisms for Organizational Behavior Change to Address the Needs of People Living with Alzheimer's Disease and Related Dementias	16	-	16
DHHS	HHSN263201800029I/75N98021F00014	Environmental Health Matters Initiative	145	-	145
DHHS	HHSN263201800029I/75N98021F00012	Advancing Anti-Racism, Diversity, Equity, and Inclusion in STEM Organizations: A Consensus Study	164	-	164
DHHS	75N98021C00032	Addressing the Long-Term Impact of the COVID-19 Pandemic	86	-	86
DHHS	HHSN263201800029I/75N98022F00002	Brain-Machine Interface Technologies	26	-	26
DHHS	HHSN263201800029I/75N98022F00003	Foundational Research Gaps and Future Directions for Digital Twins	232	-	232
DHHS	HHSN263201800029I/75N98022F00001	Forum on Traumatic Brain Injury	192	-	192
DHHS	75N94022P00480	The Pediatric Subspecialty Workforce and its Impact on Child Health and Well-Being	5	-	5
DHHS	HHSN263201800029I/75N98022F00011	Amyotrophic Lateral Sclerosis (ALS): Accelerating Treatments and Improving Quality of Life	492	-	492
DHHS	HHSN263201800029I/75N98022F00010	Developing a Framework to Address Legal, Ethical, Regulatory, and Policy Issues for Research Specific to Pregnant and Lactating Persons	922	-	922
DHHS	HHSN263201800029I/75N98022F00006	Partial Support for the Roundtable on Mentorship, Well-being and Professional Development in Higher Education and Scientific Research	148	-	148
DHHS	HHSN263201800029I/75N98022F00007	Policies and Practices for Supporting Caregivers Working in Science, Technology, Engineering, Mathematics and Medicine (STEMM) Advancing Inclusive Excellence in the Wake of the COVID-19 Pandemic	309	-	309
DHHS	HHSN263201800029I/75N98022F00004	Towards Sequencing and Mapping RNA Modifications	75	-	75
DHHS	HHSN263201800029I/75N98022F00005	Focus on Myopia: Pathogenesis and Rising incidence	266	-	266
DHHS	HHSN263201800029I/75N98022F00012	Unequal Treatment Revisited: The Current State of Racial and Ethnic Disparities in Health Care	758	-	758
DHHS	HHSN263201800029I/75N98022F00013	A Framework for the Consideration of Chronic Debilitating Conditions in Women	472	-	472
DHHS	HHSN263201800029I/75N98023F00001	Third International Summit on Human Genome Editing	50	-	50
DHHS	HHSN263201800029I/75N98023F00002	Action Collaborative on Countering U.S. Opioid Epidemic	3	-	3
DHHS	HHSN263201800029I/75N98023F00003	Research Priorities for Alzheimer's and Related Dementia	390	-	390
DHHS	75N99022P00123	Federal Facilities Council	1	-	1
DHHS	75N99023P00036	Federal Facilities Council 2	2	-	2
DHHS	HHSN263201800029I/75N98023F00004	Heritable Genetic Information in Food Animals	258	-	258
DHHS	HHSN263201800029I/75N98023F00005	NIH Research on Women's Health	327	-	327
DHHS	HHSN263201800029I/75N98023F00007	Consequences of Changes in the Cannabis Landscape	148	-	148
DHHS	HHSN263201800029I/75N98023F00008	Forum on Temporomandibular Disorder	29	-	29
DHHS	HHSN263201800029I/75N98023F00006	On Leading a Lab: Strengthening Scientific Leadership in Responsible Research: A Workshop	25	-	25
DHHS	HHSN263201800029I/75N98023F00009	Communication on Care and Use of Animals – A Workshop	31	-	31
DHHS	HHSN263201800029I/75N98023F00010	Enhancing Public Access to Results of HHS Research	122	-	122
DHHS	HHSN263201800029I/75N98023F00012	Research and Application in Team Science	80	-	80
DHHS	HHSN263201800029I/75N98023F00011	Meaningful Outcome Measures in Adult Hearing Health Care	132	-	132
DHHS	75N96023P00219	East Palestine, OH Train Disaster Workshop	290	-	290

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DHHS - Department of Health and Human Services (Continued):					
DHHS	HHSN263201800029I/75N98023F00013	Health and Disability among Working-Age Adults	$ 23	$ -	$ 23
DHHS	HHSN263201800029I/75N98023F00014	Identifying Midlife Social Exposures Early Disadvantage	20	-	20
DHHS	HHSN263201800029I/75N98023F00016	Blueprint for a National Prevention Infrastructure to Address Behavioral Health Disorders: A Consensus Study	73	-	73
DHHS	HHSN263201800029I/75N98023F00017	National Workshop and Proceedings on Burnout in STEMM	6	-	6
DHHS	HHSN263201800029I/75N98023F00019	National Cancer Policy Forum	88	-	88
DHHS	HHSN263201800029I/75N98023F00020	Forum on Drug Discovery, Development, and Translation	81	-	81
DHHS	HHSN263201800029I/75N98023F00018	Code of Conduct for Artificial Intelligence	48	-	48
DHHS	HHSN263201800029I/75N98023F00022	Roundtable on Genomics and Precision Health	14	-	14
DHHS	HHSN263201800029I/75N98023F00028	Food Forum	43	-	43
DHHS	HHSN263201800029I/75N98023F00023	Forum on Microbial Threats	56	-	56
DHHS	HHSN263201800029I/75N98023F00029	Forum on Mental Health and Substance Use Disorders	3	-	3
DHHS	HHSN263201800029I/75N98023F00027	Board on Research Data and Information	2	-	2
DHHS	HHSN263201800029I/75N98023F00025	Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics	20	-	20
DHHS	HHSN263201800029I / 75N98023F00030	Forum on Medical and Public Health Preparedness For Disasters and Emergencies and Action Collaborative on Applying Behavioral Economics to Policy	9	-	9
DHHS	HHSN263201800029/75N98023F00024	Core Support for the Board on Life Sciences	15	-	15
DHHS	HHSN263201800029I/75N98023F00033	CPOP Core	13	-	13
DHHS	75N98023P03171	Workshop on Building Institutional Capacity for Engaged Research	1	-	1
DHHS	HHSN263201800029I/75N98023F00032	CNSTAT Core	6	-	6
DHHS	HHSP233201400020B/HHSP23337076	Comprehensive Addiction and Recovery Act Outcomes Review (CARA-OR)	186	-	186
DHHS	75S20223P00002	Forum on Mental Health and Substance Use Disorders	35	-	35
		Total DHHS - Department of Health and Human Services:	21,151	294	21,445
EXOF - Executive Office of the President:					
EXOF	11316023P0001OND	Harm Reduction Services for the Executive Office of the President	69	-	69
		Total EXOF - Executive Office of the President:	69	-	69
SSA - Social Security Administration:					
SSA	28321318D00060015	Standing Committee of Medicaid & Voicemail Experts for the Social Security Administration's Disability Programs	451	-	451
SSA	28321318D00060015/28321321FDS030143	Identifying New or Improved Diagnostic or Evaluative Techniques	421	-	421
SSA	28321318D00060015/28321322FDS030153	Identification and Prognosis of Low Birth Weight Babies	718	-	718
SSA	28321318D00060015/28321322FDS030210	Long-Term Health Effects Stemming from COVID-19 and Implications for the Social Security Administration	675	-	675
SSA	28321318D00060015/28321323FDS030023	Sex and Gender Identification and Implications for Disability Evaluation	500	-	500
SSA	28321323D00060012/2832132323FDS030237	Health Disparities in the Medical Record: A Workshop	19	-	19
SSA	28321323D00060012/2832132323FDS030236	Standing Committee of Medical, Vocational and Other Experts	54	-	54
		Total SSA - Social Security Administration:	2,838	-	2,838
DHS - Department of Homeland Security:					
DHS	70RSAT21G00000003/70Z02321FMPP05300	Review of ICCOPR 2022-2027 Research and Technology Plan	56	-	56
DHS	70RSAT21G00000003/70Z02321FVPAE0400	Emerging Issues Which May Impact Coast Guard Authorities	173	-	173
DHS	70RSAT21G00000003/70Z02322FCVC20001	Improving Certificate of Compliance Examination for LGC	275	-	275
DHS	70RSAT21G00000003/70Z02322FWWM10001	Marine Board General Support Program Support 2022-2023	70	-	70
DHS	70RSAT21G00000003/70Z02323FWWM10001	Marine Board General Program Support 2023-2024	5	-	5
DHS	HSHQDC-17-A-B0001/70RWMD21F00000031	Forum on Medical and Public Health Preparedness for Disasters and Emergencies	62	-	62
DHS	70RSAT21G00000003/70RDAD21FR0000159	Facial Recognition Technologies Study, DHS	389	-	389
DHS	70RDAD22P00000014	Federal Facilities Council - FY 2022	16	-	16
DHS	70RSAT21G00000003/70Z02323FOES30001	SASH Alcohol Safety Assessment	31	-	31
DHS	70RSAT21G00000003/70US0923F1DHS2708	K-12 Threat Assessment Program Evaluation	5	-	5
DHS	70RSAT21G00000003/70FA6021F00000068	Resilient America Roundtable Research, Analysis, Planning and Collaboration Services	72	-	72
		Total DHS - Department of Homeland Security:	1,154	-	1,154
AID - U.S. Agency for International Development:					
AID	AID-OAA-A-11-00012	Assistance in Management of USAID's Partnership with the National Science Foundation and Related Activities to Promote Global S&T Partnerships	1,701	1,698	3,399

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
AID - U.S. Agency for International Development (Continued):					
AID	AID-263-A-15-00002	U.S.-Egypt Joint Science and Technology Fund	$ 635	$ 935	$ 1,570
AID	7200AA18GR00003	Forum on Microbial Threats	363	-	363
AID	72026321CA00001	U.S.-Egypt Science and Technology (S&T) Joint Fund (II)	592	1,085	1,677
		Total AID - U.S. Agency for International Development:	3,291	3,718	7,009
		Total Advisory and Research Activities:	141,800	41,714	183,514
Function: Fellowship and Other Support of Scholars:					
CMRC - Department of Commerce:					
CMRC	1305M321CNRMA0002	NOAA Resident Research Associateship Program	1,746	-	1,746
CMRC	1333ND22CNB100017	NIST Postdoctoral Research Associateship Program	434	-	434
		Total CMRC - Department of Commerce:	2,180	-	2,180
		Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics			
DOD - Department of Defense:					
DOD	FA9550-18-D-0002/FA9550-22-F-0003	Applying Behavioral Economics to Policy	3,578	-	3,578
DOD	FA955018D0002/FA955023F0013	AFRL S&T Fellowship Program	2,352	-	2,352
DOD	HT942523D0006/HT942523F0069	USAMRDC/NRC Research Associateship Program (RAP)	141	-	141
DOD	HT942523D0006/HT942523F0070	USAMRDC/NRC Research Associateship Program (RAP) USAMRIID	121	-	121
DOD	HT942523D0006/HT942523F0072	USAMRDC/NRC Research Associateship Program (RAP) AISR	53	-	53
DOD	HT942523D0006/HT942523F0073	USAMRDC/NRC Research Associateship Program (RAP) WRAIR	511	-	511
DOD	N00244-22-C-0002	NRC Research Associateship Program (RAP) for the Naval Postgraduate School (NPS)	419	-	419
		Total DOD - Department of Defense:	7,175	-	7,175
STAT - Department of State:					
STAT	19AQMM21D0113/19AQMM22F0377	Jefferson Science Fellows at the Department of State	5	-	5
STAT	19AQMM21D0113/19AQMM23F0315	Costs for A. Lakhtakia	28	-	28
STAT	19AQMM21D0113/19AQMM23F2400	OY2 Recruitment fees JSF Task Order	119	-	119
		Total STAT - Department of State:	152	-	152
DOT - Department of Transportation:					
DOT	693JJ323D000004/693JJ323F00043N	Standing Committee of Medicaid & Voicemail Experts for the Social Security Administration's Disability Programs	234	-	234
		Total DOT - Department of Transportation:	234	-	234
AID - U.S. Agency for International Development:					
AID	AID-OAA-A-15-00072	Jefferson Science Fellows	330	-	330
		Total AID - U.S. Agency for International Development:	330	-	330
		Total Fellowship and Other Support of Scholars:	10,071	-	10,071
Function: Pass-Through Funding:					
DOD - Department of Defense:					
DOD	WBSRA-21-10-NAS	The Wright Brothers Institute, Inc. - Human-Systems Integration Research Topics for the 711th Human Performance Wing of the Air Force Research Laboratory	27	-	27
DOD	UNNUMBERED	Yale University - Clinical Organization Networks for Standardization of Reconstructive Transplantation (CONSORT)	9	-	9
		Total DOD - Department of Defense:	36	-	36
INTR - Department of the Interior:					
INTR	UNR-22-42	University of Nevada, Reno - Expert Meetings: Cost and Benefits of Geologic Mapping	23	-	23
		Total INTR - Department of the Interior:	23	-	23
STAT - Department of State:					
STAT	PO20-00143	CRDF Global - Addressing Disinformation via Scientific Collaboration	3	-	3
STAT	PO22003363	FHI360 - Hidden No More: Empowering Women Leaders in STEM Visitor's Leadership Program	30	-	30
STAT	3000301408	Institute of International Education, Inc. - International Visitor Leadership Program	35	-	35
		Total STAT - Department of State:	68	-	68

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED

For the year ended December 31, 2023
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOT - Department of Transportation:					
DOT	DTNH2216H00018	Governors Highway Safety Association - National Cooperative Research and Evaluation Program (NCREP) FY-2016-2021	$ 76	$ 1,552	$ 1,628
DOT	693JJ92250010	Governors Highway Safety Association - Support for Behavioral Traffic Safety Cooperative Research Program	599	76	675
DOT	693JJ92250010	Governors Highway Safety Association - Support for Behavioral Traffic Safety Cooperative Research Program	49	-	49
DOT	UNNUMBERED	Iowa Department of Transportation - 2021 Innovations in Freight Data Workshop	32	-	32
		Total DOT - Department of Transportation:	756	1,628	2,384
NSF - National Science Foundation:					
NSF	2212721-NAE	American Society of Engineering Education - Planning Grant: The Engineering Mindset of the Future	110	-	110
NSF	2232103	American Society of Engineering Education - Evidence-Based Programs to Diversity Engineering Education	12	-	12
NSF	GA1151.PO#2299322	University of Virginia - Promising RCR Practices and Programs for Cultural Change in STEM Education	18	-	18
		Total NSF - National Science Foundation:	140	-	140
		Technical Expertise Support on Environmental Protection Agency Scientific Issues and Topics			
EPA - Environmental Protection Agency					
EPA	K262	Applying Behavioral Economics to Policy	9	-	9
		Total EPA - Environmental Protection Agency:	9	-	9
DOE - Department of Energy:					
DOE	435260	Brookhaven Science Associates, LLC - Documenting International User Paths to Success for Transition to Alternative Technologies	1	-	1
		DOE - Department of Energy:	1	-	1
DHHS - Department of Health and Human Services:					
DHHS	WA: 23-16-09	A-G Associates - Strategies to Improve Behavioral Health Case Services	277	-	277
DHHS	WA: 23-16 and WA 23-16-15	A-G Associates - Strategies to Improve Access to Behavioral Health Care Services through Medicare and Medicaid - Phase II	232	-	232
DHHS	27170005	National Council for Behavioral Health - Medical or Non-Medical (Adult-Use) of Cannabis and Cannabinoids	329	-	329
DHHS	2021-100601	National Association of County and City Health Officials - Community Wastewater-based Infectious Disease Surveillance	104	-	104
DHHS	2022-021102	National Association of County and City Health Officials - Hack-A-Thon Sexually Transmitted Infections	114	30	144
		DHHS - Department of Health and Human Services:	1,056	30	1,086
		Total Pass-Through Funding:	2,089	1,658	3,747
		Total Expenditures of Federal Awards: Research and Development Cluster:	$ 153,960	$ 43,372	$ 197,332

The accompanying schedule of expenditures of federal awards and notes to schedule of expenditures of federal awards and detailed schedule of expenditures of federal awards should be read in conjunction with this schedule.

National Academy of Sciences

NOTES TO SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS AND DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS

For the year ended December 31, 2023

NOTE 1 - BASIS OF PRESENTATION

The accompanying schedule of expenditures of federal awards summarizes, at the agency or sub agency level, the expenditures of National Academy of Sciences ("NAS") under programs of the federal government for the year ended December 31, 2023.

The accompanying detailed schedule of expenditures of federal awards provides the same population of federal expenditures at the individual award level.

For purposes of both accompanying schedules, federal awards include all grants, contracts, and similar agreements entered into directly between NAS and agencies of the federal government, and all sub awards to NAS by nonfederal organizations pursuant to federal grants, contracts, and similar agreements.

All federal awards received by NAS are classified as one clustered major program, research and development awards, in accordance with the provisions of Office of Management and Budget ("OMB") Title 2 U.S. *Code of Federal Regulations (CFR)* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* ("Uniform Guidance").

In the accompanying schedules, NAS reports federal awards, within the research and development cluster, in the following categories:

Advisory and Research - This category includes awards from executive and legislative agencies requesting that NAS either (1) form a committee of experts to research a scientific or technological issue (generally resulting in a report or a symposium) or (2) administer a federally sponsored research and development program. These awards are provided under cost type contracts and grants from various federal agencies.

Fellowships and Other Support of Scholars - This category includes awards that support research and development fellow and scholar programs which NAS administers on behalf of the federal government. These awards are provided under cost type contracts and grants from various federal agencies.

Pass-Through Funding - NAS is also the subrecipient of federal funds from nonfederal organizations. These funds are reported in the accompanying schedules as federal pass through funding received.

NAS uses a modified-accrual basis accounting for reporting costs incurred on behalf of sponsors. All expenditures are recognized and recorded on a cash basis, except prepaid insurance, prepaid magazine subscriptions, prepaid postage, travel advances, and accrued annual leave, which are recognized on the accrual basis of accounting.

Expenses that are recognized and recorded on other than a cash or accrual basis include the capitalization and subsequent depreciation/amortization of fixed assets and the related provisions of Cost Accounting Standard 414, *Cost of Money*.

NOTE 2 - INDIRECT COSTS

Total expenditures as shown on the schedules include indirect costs recoverable from sponsors. Indirect costs for NAS consist of overhead and general and administrative expenses. The overhead rate is assessed against direct salaries, accrued leave, fringe benefits, and services provided by outside contractors on NAS property. The general and administrative rate is assessed against direct costs and overhead.

NAS allocates indirect costs to government contracts and grants using fixed rates, with carryforward provisions, established by NAS' cognizant agency.

NAS has not elected to use the 10% de minimus cost rate allowed under the Uniform Guidance.

NOTE 3 - ASSISTANCE LISTING NUMBERS

The accompanying detailed schedule of expenditures of federal awards provides specific identifying award information assigned by the respective federal sponsor in the absence of Assistance Listing numbers.

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REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS REQUIRED BY *GOVERNMENT AUDITING STANDARDS*

To the Audit Committee of the
National Academy of Sciences:

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 (*Government Auditing Standards*), the financial statements of the National Academy of Sciences ("NAS"), which comprise the statement of financial position as of December 31, 2023, and the related statements of activities and cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated June 13, 2024.

Report on internal control over financial reporting
In planning and performing our audit of the financial statements, we considered NAS' 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 financial statements, but not for the purpose of expressing an opinion on the effectiveness of NAS' internal control. Accordingly, we do not express an opinion on the effectiveness of NAS' 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 NAS' 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.

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Report on compliance and other matters
As part of obtaining reasonable assurance about whether NAS' 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 NAS' internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering NAS' internal control and compliance. Accordingly, this report is not suitable for any other purpose.

Grant Thornton LLP

Melville, New York
June 13, 2024

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REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS ON COMPLIANCE FOR EACH MAJOR FEDERAL PROGRAM AND ON INTERNAL CONTROL OVER COMPLIANCE REQUIRED BY THE UNIFORM GUIDANCE

To the Audit Committee of the
National Academy of Sciences:

Report on compliance for each major federal program

Opinion on each major federal program
We have audited the compliance of the National Academy of Sciences ("NAS") with the types of compliance requirements identified as subject to audit in the U.S. Office of Management and Budget's *OMB Compliance Supplement* that could have a direct and material effect on NAS' major federal program for the year ended December 31, 2023. NAS' major federal program is identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

In our opinion, NAS complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended December 31, 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 (*Government Auditing Standards*); 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 Auditor's Responsibilities for the Audit of Compliance section of our report.

We are required to be independent of NAS 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 opinion on compliance for the major federal program. Our audit does not provide a legal determination of NAS' 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 NAS' federal programs.

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Auditor's 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 NAS' 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 NAS' compliance with the requirements of its 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 NAS' compliance with the compliance requirements referred to above and performing such other procedures as we considered necessary in the circumstances.
- Obtain an understanding of 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 NAS' 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.

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 a 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 Auditor's 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. Given these limitations, during our audit we did not identify any deficiencies in NAS' internal control over compliance that we consider to be material weaknesses or significant deficiencies. However, material weaknesses or significant deficiencies in internal control over compliance may exist that have not been 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.

Grant Thornton LLP

Melville, New York
June 13, 2024

National Academy of Sciences

SCHEDULE OF FINDINGS AND QUESTIONED COSTS

For the year ended December 31, 2023

SECTION I - SUMMARY OF AUDITOR'S RESULTS

Financial Statements:

Type of auditor's report issued:	Unmodified
Internal control over financial reporting:	
• Material weakness(es) identified?	__ yes X no
• Significant deficiencies identified that are not considered to be material weakness(es)?	__ yes X none reported
• Noncompliance material to the financial statements noted?	__ yes X no

Federal Awards:

Internal control over the major program:	
• Material weakness(es) identified?	__ yes X no
• Significant deficiencies identified that are not considered to be material weakness(es)?	__ yes X none reported
Type of auditor's report issued on compliance for the major program:	Unmodified
Any audit findings disclosed that are required to be reported in accordance with Section 2 CFR 200.516(a) of the Uniform Guidance?	__ yes X no

Identification of the major program:

Federal Grantor/Program Title	Federal Assistance Listing Number
Research and Development Cluster	Various

Dollar threshold used to distinguish between type A and type B programs:	$3,000,000
Auditee qualified as low-risk auditee?	X yes __ no

SECTION II - FINANCIAL STATEMENT FINDINGS

None identified.

SECTION III - FEDERAL AWARD FINDINGS AND QUESTIONED COSTS

None identified.