

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, 2021 and 2020

Contents

	Page
Report of Independent Certified Public Accountants	3
Financial Statements:	
Statements of Financial Position as of December 31, 2021 and 2020	6
Statements of Activities for the years ended December 31, 2021 and 2020	7
Statements of Cash Flows for the years ended December 31, 2021 and 2020	8
Notes to Financial Statements	9
Uniform Guidance Supplementary Information:	
Schedule of Expenditures of Federal Awards for the year ended December 31, 2021	35
Detailed Schedule of Expenditures of Federal Awards for the year ended December 31, 2021	36
Notes to Schedule of Expenditures of Federal Awards and Detailed Schedule of Expenditures of Federal Awards for the year ended December 31, 2021	56
Report of Independent Certified Public Accountants on Internal Control over Financial Reporting and on Compliance and Other Matters Required by <i>Government Auditing Standards</i>	58
Report of Independent Certified Public Accountants on Compliance for each Major Federal Program and on Internal Control over Compliance Required by the Uniform Guidance	60
Schedule of Findings and Questioned Costs for the year ended December 31, 2021:	
Section I - Summary of Auditor's Results	63
Section II - Financial Statement Findings	64
Section III - Federal Award Findings and Questioned Costs	64

GRANT THORNTON LLP

445 Broadhollow Road, Suite 300
Melville, NY 11747

D +1 631 249 6001
F +1 631 249 6144

REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

To the Audit Committee of
National Academy of Sciences:

Report on the financial statements**Opinion**

We have audited the financial statements of National Academy of Sciences (“NAS”), which comprise the statements of financial position as of December 31, 2021 and 2020, 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, 2021 and 2020, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

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.

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, 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 14, 2022 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 14, 2022

NATIONAL ACADEMY OF SCIENCES
Statements of Financial Position
As of December 31, 2021 and 2020
(in thousands)

	<u>2021</u>	<u>2020</u>
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents (Note 2)	\$ 89,257	\$ 59,017
Contracts receivable, net (Note 2)	52,463	47,422
Contributions and other receivables, net (Notes 2 and 4)	16,389	20,581
Other current assets	<u>9,509</u>	<u>7,012</u>
Total current assets	167,618	134,032
Other assets (Notes 2, 13, and 15)	23,358	17,769
Investments (Note 3)	1,378,144	1,253,415
Contributions receivable, net (Notes 2 and 4)	9,797	6,413
Property and equipment, net (Note 5)	135,857	140,452
Einstein Memorial	<u>1,723</u>	<u>1,723</u>
Total assets	<u>\$ 1,716,497</u>	<u>\$ 1,553,804</u>
LIABILITIES AND NET ASSETS		
CURRENT LIABILITIES		
Accounts payable and accrued expenses	\$ 35,324	\$ 35,240
Deferred revenue and advances (Notes 2 and 11)	73,958	51,362
Other current liabilities (Notes 2, 12, 14, and 15)	<u>8,726</u>	<u>7,699</u>
Total current liabilities	118,008	94,301
Bonds payable, net (Note 12)	139,543	144,339
Funds held on behalf of others (Note 3)	15,075	13,882
Accrued employee benefits (Note 13)	2,301	1,667
Other long-term liabilities (Notes 2, 12, and 15)	<u>8,251</u>	<u>12,033</u>
Total liabilities	<u>283,178</u>	<u>266,222</u>
Commitments and contingencies (Notes 3, 11, 12, 13, and 15)		
NET ASSETS		
Without donor restrictions	167,625	145,988
With donor restrictions (Notes 8 and 9)	<u>1,265,694</u>	<u>1,141,594</u>
Total net assets	<u>1,433,319</u>	<u>1,287,582</u>
Total liabilities and net assets	<u>\$ 1,716,497</u>	<u>\$ 1,553,804</u>

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

NATIONAL ACADEMY OF SCIENCES
Statements of Activities
For the years ended December 31, 2021 and 2020
(in thousands)

	2021			2020		
	Without Donor Restrictions	With Donor Restrictions	Total	Without Donor Restrictions	With Donor Restrictions	Total
Revenues, gains, and other support						
Government contracts and grants (Notes 2 and 11)	\$ 174,526	\$ -	\$ 174,526	\$ 190,547	\$ -	\$ 190,547
Private contracts and grants	16,063	59,430	75,493	15,837	41,807	57,644
Other contributions	2,085	1,789	3,874	3,671	731	4,402
Fees and publications	19,256	-	19,256	19,196	-	19,196
Investment income	20,607	136,001	156,608	14,389	129,982	144,371
Other income (Note 12)	10,631	-	10,631	14,527	-	14,527
Net assets released from restriction (Note 8)	73,120	(73,120)	-	65,793	(65,793)	-
Total revenues, gains, and other support	316,288	124,100	440,388	323,960	106,727	430,687
Expenses (Note 2)						
Programs (Note 10)	250,159	-	250,159	254,226	-	254,226
Management and general	47,866	-	47,866	53,656	-	53,656
Fundraising	3,180	-	3,180	3,061	-	3,061
Total expenses	301,205	-	301,205	310,943	-	310,943
Other components of net periodic benefit cost (Note 13)	(2,589)	-	(2,589)	(1,182)	-	(1,182)
Postretirement changes other than net periodic benefit cost (Note 13)	(3,965)	-	(3,965)	(6,015)	-	(6,015)
Change in net assets	21,637	124,100	145,737	20,214	106,727	126,941
Net assets at beginning of year	145,988	1,141,594	1,287,582	125,774	1,034,867	1,160,641
Net assets at end of year	\$ 167,625	\$ 1,265,694	\$ 1,433,319	\$ 145,988	\$ 1,141,594	\$ 1,287,582

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, 2021 and 2020
(in thousands)

	<u>2021</u>	<u>2020</u>
Cash flows from operating activities		
Change in net assets	\$ 145,737	\$ 126,941
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation and amortization	6,110	6,550
Loss on disposal of property and equipment	6	-
Bad debt expense	365	227
Net gain on investments	(149,700)	(136,335)
Net gain on investments held on behalf of others	(2,031)	(1,383)
Change in value of interest-rate swap	(1,528)	193
Change in value of split-interest agreements	(767)	(833)
Contributions restricted for endowment	(2,572)	(2,835)
Decrease (increase) in assets:		
Other receivables	785	1,289
Contracts receivable	(5,384)	14,551
Other current assets	(2,497)	5,568
Other assets	(4,612)	(5,812)
Increase (decrease) in liabilities:		
Accounts payable and accrued expenses	84	2,840
Deferred revenue and advances	22,596	4,124
Other current liabilities	887	159
Funds held on behalf of others	1,193	630
Accrued employee benefits	634	450
Other long-term liabilities	(2,410)	1,214
	<u>6,896</u>	<u>17,538</u>
Net cash provided by operating activities		
	<u>6,896</u>	<u>17,538</u>
Cash flows from investing activities		
Additions to property and equipment	(1,385)	(244)
Sales or maturities of investments	353,062	506,673
Purchases of investments	(326,060)	(473,698)
	<u>25,617</u>	<u>32,731</u>
Net cash provided by investing activities		
	<u>25,617</u>	<u>32,731</u>
Cash flows from financing activities		
Contributions restricted for endowment	2,572	2,835
Payments on bond principal	(4,845)	(4,465)
	<u>(2,273)</u>	<u>(1,630)</u>
Net cash used in financing activities		
	<u>(2,273)</u>	<u>(1,630)</u>
NET INCREASE IN CASH AND CASH EQUIVALENTS	30,240	48,639
Cash and cash equivalents, beginning of year	<u>59,017</u>	<u>10,378</u>
Cash and cash equivalents, end of year	<u>\$ 89,257</u>	<u>\$ 59,017</u>
Supplemental disclosure of cash flow information		
Interest paid	<u>\$ 2,470</u>	<u>\$ 3,664</u>

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

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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 expenditures 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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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, 2021 and 2020, NAS had charitable gift annuity assets of approximately \$6.4 million and \$5.4 million, respectively, which is included in other assets in the accompanying statements of financial position. At December 31, 2021 and 2020, \$5.4 million and \$4.8 million, respectively, of these assets were classified as level 1 and \$1.0 million and \$0.6 million, respectively were classified as level 2 in the fair value hierarchy (as described in Note 3). NAS has recorded a liability of approximately \$3.2 million at December 31, 2021 and \$2.9 million at December 31, 2020, 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. For the years ended December 31, 2021 and 2020, the U.S. Department of Transportation accounted for 41% and 40%, respectively, of NAS' total government contracts and grants revenue.

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 20% and 18% were considered exchange transactions for the years ended December 31, 2021 and 2020, respectively. Of the total private contracts and grants, approximately 16% and 22% were considered exchange transactions for the years ended December 31, 2021 and 2020, respectively.

Contracts and grants are generally invoiced monthly for recoverable costs incurred in the preceding month. Contracts receivable consisted of \$22.1 million of billed receivables and \$30.4 million of unbilled receivables, as of December 31, 2021, respectively. Contracts receivable consisted of \$18.2 million of billed receivables and \$29.2 million of unbilled receivables, as of December 31, 2020, 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, 2021 and 2020, NAS was owed \$14.1 million and \$11.4 million, respectively, on these exchange contracts and grants. As of December 31, 2019, NAS was owed \$25.3 million on receivables related to revenue from exchange contracts and grants.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

Allowances are recorded for estimated uncollectible contracts and grants based upon management's judgment and analysis of the creditworthiness of the sponsoring organization, past collection experience, and other relevant factors. At both December 31, 2021 and 2020, NAS had an allowance for estimated uncollectible contracts and grants of \$1.5 million, which is reported net of contracts receivable in the accompanying statements of financial position.

For contracts and grants treated as contributions, NAS had \$279.8 million and \$285.3 million in unrecognized conditional contributions as of December 31, 2021 and 2020, 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 contributions 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 \$2.1 million and \$2.4 million in unrecognized conditional contributions as of December 31, 2021 and 2020, 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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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 \$3.1 million and \$6.9 million for the years ended December 31, 2021 and 2020, 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 fees and publications.

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, 2021 and 2020, NAS had \$33.4 million and \$30.4 million in deferred revenue, respectively, for these contracts and grants. Of the \$30.4 million in deferred revenue as of December 31, 2020, \$10.4 million was recognized as revenue during the year ended December 31, 2021. Of the \$28.2 million in deferred revenue as of December 31, 2019, \$9.8 million was recognized as revenue during the year ended December 31, 2020. 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, \$2.6 million in deferred revenue as of December 31, 2020 was recognized as revenue during the year ended December 31, 2021 and \$2.8 million in deferred revenue as of December 31, 2019 was recognized as revenue during the year ended December 31, 2020.

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, \$2.3 million in deferred revenue as of December 31, 2020 was recognized as revenue during the year ended December 31, 2021 and \$5.9 million in deferred revenue as of December 31, 2019 was recognized as revenue during the year ended December 31, 2020.

Deferred revenue and advances consist of the following as of December 31, 2021 and 2020 (in thousands):

	2021	2020
Advances from private grants and contract sponsors	\$ 35,784	\$ 32,189
Advances from U.S. government sponsors	30,625	14,280
Meetings and publication subscriptions	7,549	4,893
Total deferred revenue and advances	<u>\$ 73,958</u>	<u>\$ 51,362</u>

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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 service is conducting scientific research, convening meetings, and administering grant and fellowship programs. 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.

	2021 (in thousands)			
	Programs	Management and General	Fundraising	Total Expenses
Salaries and benefits	\$ 113,286	\$ 33,352	\$ 2,512	\$ 149,150
Grants, prizes, and awards	52,800	92	-	52,892
Subcontracts	42,306	-	-	42,306
Occupancy, depreciation, amortization, and interest	11,047	7,190	124	18,361
Professional fees	12,665	4,791	259	17,715
Printing and publications	7,916	918	63	8,897
Information technology	5,468	362	150	5,980
Travel	942	276	36	1,254
Conferences, conventions, and meetings	836	210	19	1,065
Other	2,893	675	17	3,585
Total expenses	<u>\$ 250,159</u>	<u>\$ 47,866</u>	<u>\$ 3,180</u>	<u>\$ 301,205</u>

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

	2020 (in thousands)			
	Programs	Management and General	Fundraising	Total Expenses
Salaries and benefits	\$ 104,792	\$ 37,808	\$ 2,386	\$ 144,986
Grants, prizes, and awards	62,711	97	-	62,808
Subcontracts	45,873	-	2	45,875
Occupancy, depreciation, amortization, and interest	10,399	8,581	120	19,100
Professional fees	9,464	4,414	208	14,086
Printing and publications	8,056	896	49	9,001
Travel	4,494	473	63	5,030
Information technology	4,192	428	156	4,776
Conferences, conventions, and meetings	1,375	484	36	1,895
Other	2,870	475	41	3,386
Total expenses	<u>\$ 254,226</u>	<u>\$ 53,656</u>	<u>\$ 3,061</u>	<u>\$ 310,943</u>

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.

New Accounting Standard

During 2021, NAS adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2018-14, *Compensation – Retirement Benefit: Disclosure Framework – Changes to the Disclosure Requirements for Defined Benefit Plans*. The amendments in this update remove disclosures that no longer are considered cost beneficial, clarify specific requirements of disclosures, and add disclosure requirements identified as relevant. As required by ASU 2018-14, NAS applied the requirements on a retrospective basis to all periods presented.

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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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. 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, 2021 and 2020 (in thousands):

	2021	2020
Program pool investments	\$ 55,449	\$ 47,201
Gulf Research Program investments	589,417	557,420
Long-term investment pool, including endowment assets	676,076	595,912
Other investments	57,202	52,882
	<u>\$ 1,378,144</u>	<u>\$ 1,253,415</u>

The following table presents NAS' fair value hierarchy for those assets measured at fair value on a recurring basis at December 31, 2021 (in thousands):

	Total	Level 1	Investments Measured at NAV
Investments:			
Cash equivalents	\$ 30,370	\$ 30,370	\$ -
Bonds and notes:			
U.S. treasuries/government bonds	370,884	370,884	-
Equity:			
U.S. large equity	292,366	292,366	-
U.S. small/mid equity	56,617	56,617	-
Non-U.S. equity (developed)	28,239	28,239	-
Non-U.S. equity (emerging)	12,703	12,703	-
Index futures contracts	70	70	-
Long/short equity hedge funds	84,359	-	84,359
Hedge fund investments	361,866	-	361,866
Private equity funds	123,095	-	123,095
	<u>\$ 1,360,569</u>	<u>\$ 791,249</u>	<u>\$ 569,320</u>
	<u>17,575</u>		
Cash held for investment and receivables			
	<u>\$ 1,378,144</u>		

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

The following table presents NAS' fair value hierarchy for those assets measured at fair value on a recurring basis at December 31, 2020 (in thousands):

	Total	Level 1	Investments Measured at NAV
Investments:			
Cash equivalents	\$ 118,401	\$ 118,401	\$ -
Bonds and notes:			
U.S. treasuries/government bonds	339,179	339,179	-
Equity:			
U.S. large equity	214,584	214,584	-
U.S. small/mid equity	68,182	68,182	-
Equity futures	2,441	2,441	-
Long/short equity hedge funds	89,488	-	89,488
Hedge fund investments	331,029	-	331,029
Private equity funds	63,898	-	63,898
Total	\$ 1,227,202	\$ 742,787	\$ 484,415
Cash held for investment and receivables	26,213		
Total investments	\$ 1,253,415		

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 \$15.1 million and \$13.9 million as of December 31, 2021 and 2020, 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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

The following table presents the nature and risk of assets with fair values estimated using NAV held at December 31, 2021 and 2020 (in thousands):

	As of December 31, 2021		NAV as of December 31, 2020	Redemption Frequency	Redemption Notice Period
	NAV	Unfunded Commitments			
Long/short equity hedge funds - U.S. large equity ^(a)	\$ 84,359	N/A	\$ 89,488	Monthly/Quarterly	60/120 days
Hedge fund - multi-strategies multi-vehicle ^(b)	361,866	\$ 5,705	331,029	Monthly/Quarterly	30/60/75/90/120/
Private equity - Asia ^(c)	36,583	401	24,370	Annually	365 days
Private equity - Global ^(d)	83,759	123,953	39,101	N/A	N/A
Private equity - Domestic ^(e)	2,753	2,468	427	N/A	N/A
Total	\$ 569,320	\$ 132,527	\$ 484,415		

- (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 8% of this asset class is in the process of being liquidated.
- (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 four years.
- (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 five to eight years. For two funds in this category, the timing of liquidation has not been communicated.
- (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 ten years.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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):

	2021	2020
Less than one year	\$ 12,055	\$ 13,807
One to five years	9,773	6,638
Thereafter	240	-
	<u>22,068</u>	<u>20,445</u>
Less:		
Discount at rates ranging from 0.43% to 3.35%	(216)	(226)
Allowance for uncollectible contributions	(300)	(250)
	<u>21,552</u>	<u>19,969</u>
Less: current portion	<u>(11,755)</u>	<u>(13,556)</u>
Total contributions receivable, net, long-term	<u>\$ 9,797</u>	<u>\$ 6,413</u>

NOTE 5 - PROPERTY AND EQUIPMENT, NET

Property and equipment as of December 31, 2021 and 2020 is comprised of the following (in thousands):

	2021	2020
Land	\$ 29,689	\$ 29,689
Furniture and equipment	26,211	25,793
Buildings and improvements	177,910	177,910
Capitalized software	16,306	15,964
Work in progress	588	401
Leasehold improvements	4,073	4,073
	<u>254,777</u>	<u>253,830</u>
Less: accumulated depreciation and amortization	<u>(118,920)</u>	<u>(113,378)</u>
Total property and equipment, net	<u>\$ 135,857</u>	<u>\$ 140,452</u>

Depreciation and amortization expense was \$6.0 million and \$6.4 million for the years ended December 31, 2021 and 2020, respectively.

NOTE 6 - LINES OF CREDIT

NAS maintains an available line of credit from Wells Fargo, which bears interest at the London Inter-Bank Offered Rate ("LIBOR") plus 0.53% (0.63% as of December 31, 2021) and expires on September 29, 2022. The available line of credit was \$30 million prior to September 29, 2021 and \$20 million from September 29, 2021 to December 31, 2021. The available line of credit increased to \$30 million on January 1, 2022 and decreased back to \$20 million on April 1, 2022 where it will remain until the expiration on September 29, 2022. Until September 29, 2021, the line of credit from Wells Fargo bore interest at LIBOR plus 0.95% (1.09% as of December 31, 2020).

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

NAS also maintains an available \$20 million line of credit with TD Bank, N.A., which was decreased from \$30 million in August 2021, and expires on October 31, 2023. This line of credit bears interest at Secured Overnight Financing Rate ("SOFR") plus 0.63% (1.049% as of December 31, 2021). Until August 2021, the line of credit from TD Bank bore interest at LIBOR plus 1.15% (1.29% as of December 31, 2020).

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

As of December 31, 2021 and 2020, 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, 2021 and 2020 totaled approximately \$154,000 and \$74,000, 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, 2021 and 2020 (in thousands):

	2021	2020
Financial assets:		
Cash and cash equivalents	\$ 89,257	\$ 59,017
Contracts receivable, net	52,463	47,422
Contributions and other receivables, net, current	16,389	20,581
Investments	1,378,144	1,253,415
	<u>1,536,253</u>	<u>1,380,435</u>
Plus endowment fund appropriation for the following year	5,082	4,890
Less those unavailable for general expenditures within one year, due to:		
Contractual or donor-imposed restrictions:		
Endowment funds	(537,467)	(474,861)
Funds restricted by donors through time or purpose restrictions	(708,067)	(660,324)
Internal designations	(48,508)	(45,738)
Funds held on behalf of others	(15,075)	(13,882)
	<u>(1,309,117)</u>	<u>(1,194,805)</u>
Financial assets available to meet cash needs for general expenditures within one year	<u>\$ 232,218</u>	<u>\$ 190,520</u>

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 \$40 million of available lines of credit (as further discussed in Note 6). In addition, NAS has \$49 million in internally designated funds, which are available for general expenditure with appropriate internal approval.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

NOTE 8 - NET ASSETS WITH DONOR RESTRICTIONS

Net assets with donor restrictions are available for the following purposes as of December 31, 2021 and 2020 (in thousands):

	2021	2020
Subject to expenditure for specific purpose:		
Gulf Research Program	\$ 594,136	\$ 562,045
Other sponsored research and advisory programs	134,034	104,606
	<u>728,170</u>	<u>666,651</u>
Investment in perpetuity, including amounts above the original gift amount (\$183,173 and \$182,751 as of December 31, 2021 and 2020, respectively) which, once appropriated, are expendable to support:		
Other sponsored research and advisory programs	275,574	242,750
Prizes and awards	87,499	76,844
Woods Hole facility	9,351	8,359
General operations	165,100	146,990
	<u>537,524</u>	<u>474,943</u>
Total net assets with donor restrictions	<u>\$ 1,265,694</u>	<u>\$ 1,141,594</u>

Net assets were released from donor-imposed restrictions in satisfaction of the following purposes during the years ended December 31, 2021 and 2020 (in thousands):

	2021	2020
Purpose-restricted releases:		
Gulf Research Program	\$ 23,367	\$ 22,816
Other sponsored research and advisory programs	42,709	34,537
Prizes and awards	1,495	2,262
Woods Hole facility	310	344
	<u>67,881</u>	<u>59,959</u>
Time-restricted releases	<u>5,239</u>	<u>5,834</u>
Net assets released from restrictions	<u>\$ 73,120</u>	<u>\$ 65,793</u>

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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

NOTE 9 - ENDOWMENT

Endowment Assets

The NAS endowment consists of 133 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 assets for the years ended December 31, 2021 and 2020 are as follows (in thousands):

	2021	2020
Endowment assets with donor restrictions, beginning of year	\$ 467,391	\$ 431,185
Investment return, net	73,927	46,752
Contributions	2,572	2,835
Amounts appropriated for expenditure	(13,165)	(13,381)
Endowment assets with donor restrictions, end of year	<u>\$ 530,725</u>	<u>\$ 467,391</u>

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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, 2021 and 2020, respectively, there were no endowment funds with a fair value below the original value of the gift. 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, 2021 and 2020 are summarized as follows (in thousands):

	2021	2020
Transportation Research Board	\$ 70,318	\$ 74,627
Policy and Global Affairs	61,880	64,725
Gulf Research Program	21,307	20,721
Health and Medicine	19,363	19,256
Earth and Life Studies	15,722	12,329
Engineering and Physical Sciences	15,033	14,777
Proceedings of the National Academy of Sciences	13,051	12,581
Behavioral and Social Sciences and Education	12,233	10,211
National Academy of Medicine Programs	9,330	7,018
National Academy of Sciences Programs	6,629	12,386
National Academy of Engineering Programs	2,379	2,782
National Academy Press	1,742	1,719
LabX	1,172	1,094
Total program expenses	<u>\$ 250,159</u>	<u>\$ 254,226</u>

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 \$25.2 million and \$8.4 million as of December 31, 2021 and 2020, respectively. The over-recovery is included in the deferred revenue and advances balance in the accompanying statements of financial position.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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

	<u>2021</u>	<u>2020</u>
Series 2008A revenue bonds, term, at flexible rates (0.9% in 2021 and 1.4% in 2020), maturing at various dates from January 1, 2021 through 2043	\$ 54,520	\$ 55,850
Series 2009A revenue bonds, term, at flexible rates (0.7% in 2021 and 1.1% in 2020), maturing at various dates from January 1, 2021 through 2049	41,940	43,270
Series 2017A revenue bonds, term, with fixed interest rate of 2.41% until April 1, 2020, with flexible rates thereafter (0.6% in 2021 and 0.9% in 2020), maturing at various dates from April 1, 2021 through 2040	<u>49,505</u>	<u>51,690</u>
Total bonds, at face value	145,965	150,810
Less: debt issuance costs	<u>(1,492)</u>	<u>(1,626)</u>
Total bonds payable	144,473	149,184
Less: current portion (included in other current liabilities)	<u>(4,930)</u>	<u>(4,845)</u>
Bonds payable, long-term	<u>\$ 139,543</u>	<u>\$ 144,339</u>

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):

<u>Years Ending December 31:</u>	
2022	\$ 4,930
2023	4,995
2024	5,070
2025	5,160
2026	5,265
Thereafter	<u>120,545</u>
	<u>\$ 145,965</u>

Interest expense on the bonds payable for the years ended December 31, 2021 and 2020 totaled \$1.1 million and \$1.9 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 67% of one-month LIBOR 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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

NAS recorded a gain on the change in the fair value of the swap of approximately \$1.6 million and \$0.08 million for the years ended December 31, 2021 and 2020, 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 \$3.3 million and \$4.9 million as of December 31, 2021 and 2020, 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, 2021 and 2020 amounted to \$13.2 million and \$12.9 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

During the year ended December 31, 2019, NAS implemented a 457(b) plan ("457(b) Plan"). The purpose of the 457(b) Plan is 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 \$2.3 million and \$1.7 million as of December 31, 2021 and 2020, 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, 2021, \$2,221,000, \$26,000 and \$54,000 were valued at Level 1, Level 2, and Level 3 of the fair value hierarchy, respectively. As of December 31, 2020, \$1,621,000, \$13,000, and \$32,000 of these investments 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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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 accrued postretirement benefit obligation 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):

	<u>2021</u>	<u>2020</u>
Net actuarial gain	\$ (4,022)	\$ (5,469)
Recognized net actuarial loss	-	(603)
Recognized prior service credit	<u>57</u>	<u>57</u>
Total	<u>\$ (3,965)</u>	<u>\$ (6,015)</u>

Items not yet recognized as a component of net periodic benefit cost at December 31, 2021 and 2020 are as follows (in thousands):

	<u>2021</u>	<u>2020</u>
Net actuarial loss	\$ 1,193	\$ 5,215
Prior service credit	<u>(40)</u>	<u>(97)</u>
Total	<u>\$ 1,153</u>	<u>\$ 5,118</u>

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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, 2021 and 2020 (in thousands):

	2021	2020
Change in benefit obligation:		
Benefit obligation, beginning of year	\$ 54,563	\$ 50,929
Service cost	2,025	1,839
Interest cost	1,302	1,640
Actuarial (gain) loss	(1,262)	1,198
Benefits provided	(1,091)	(1,043)
Benefit obligation, end of year	<u>55,537</u>	<u>54,563</u>
Change in plan assets:		
Fair value of plan assets, beginning of year	62,123	52,595
Actual return on plan assets	6,594	10,035
Employer contributions	-	657
Benefits paid	(1,093)	(1,164)
Fair value of plan assets, end of year	<u>67,624</u>	<u>62,123</u>
Funded status (over funded)	<u>\$ 12,087</u>	<u>\$ 7,560</u>
	2021	2020
Components of net periodic benefit cost:		
Service cost	\$ 2,025	\$ 1,839
Interest cost	1,302	1,640
Expected return on plan assets	(3,834)	(3,368)
Recognized prior service credit	(57)	(57)
Recognized actuarial loss	-	603
Net periodic (credit) benefit cost	<u>\$ (564)</u>	<u>\$ 657</u>

During the year ended December 31, 2021, NAS recognized an actuarial gain of \$1.3 million primarily due to the 39 basis point increase in the discount rate used to measure the Plan benefit obligation at December 31, 2021 as compared to December 31, 2020 offset by updates to the claims costs, retiree contribution rates, and mortality assumptions. During the year ended December 31, 2020, NAS recognized an actuarial loss of \$1.2 million primarily due in the 85 basis point decrease in the discount rate used to measure the Plan benefit obligation at December 31, 2020 as compared to December 31, 2019 offset by updates to the claims costs, trend rates, and mortality assumptions.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

The assumptions used to determine net periodic benefit cost for the years ended December 31, 2021 and 2020 are as follows:

	2021	2020
Discount rate	2.42%	3.27%
Expected long-term return on plan assets	6.25%	6.50%
Rate of increase in healthcare costs:		
Under age 65	5.56%	5.77%
Over age 65	5.16%	5.30%

The assumptions used to calculate the accumulated postretirement benefit obligation as of December 31, 2021 and 2020 are as follows:

	2021	2020
Discount rate	2.81%	2.42%
Rate of increase in healthcare costs for next year:		
Under age 65	5.46%	5.56%
Over age 65	5.13%	5.16%

The trend rate for growth in healthcare costs was assumed to decline gradually beginning in 2021 to 4.0% by the year 2046.

NAS postretirement benefit plan asset allocations at December 31, 2021 and 2020, by asset class, are as follows:

	2021	2020
Cash	2%	4%
Bonds and notes	38	37
Equity	60	59
	<u>100%</u>	<u>100%</u>

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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

The following table presents the fair value hierarchy for the postretirement benefit plan assets at December 31, 2021 (in thousands):

	Total	Fair Value Measurements Using	
		Level 1	Level 2
Financial assets:			
Retiree Welfare Benefit Plan investments:			
Cash equivalents	\$ 1,095	\$ 1,095	\$ -
Bonds and notes:			
U.S. treasuries/government bonds	12,969	12,969	-
Corporate bonds	12,897	11,765	1,132
Non-U.S. fixed income	33	-	33
Equity:			
U.S. large equity	26,489	26,489	-
U.S. small/mid equity	2,116	2,116	-
Non-U.S. equity (developed)	11,775	11,775	-
Total		\$ 66,209	\$ 1,165
Cash held for investment	250		
Total investments	\$ 67,624		

The following table presents the fair value hierarchy for the postretirement benefit plan assets at December 31, 2020 (in thousands):

	Total	Fair Value Measurements Using	
		Level 1	Level 2
Financial assets:			
Retiree Welfare Benefit Plan investments:			
Cash equivalents	\$ 2,213	\$ 2,213	\$ -
Bonds and notes:			
U.S. treasuries/government bonds	9,199	9,199	-
Corporate bonds	13,851	11,773	2,078
Non-U.S. fixed income	35	-	35
Equity:			
U.S. large equity	22,889	22,889	-
U.S. small/mid equity	2,476	2,476	-
Non-U.S. equity (developed)	10,807	10,807	-
Non-U.S. equity (emerging)	403	403	-
Total		\$ 59,760	\$ 2,113
Cash held for investment	250		
Total investments	\$ 62,123		

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 2022, as there is an actuarially determined net periodic credit for 2022 of approximately \$405,000.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

The following benefit payments, which reflect future services, are expected to be paid in future years as follows, as of December 31, 2021 (in thousands):

2022	\$	1,660
2023		1,806
2024		1,998
2025		2,049
2026		2,170
2027-2031		13,046
		<hr/>
	\$	22,729

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 \$4.9 million and \$3.9 million in 2021 and 2020, respectively, on behalf of NAEF. NAS disbursed \$4.5 million and \$3.7 million to NAEF from these collected amounts in 2021 and 2020, 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 2021 and 2020 for Beckman Center operations totaled \$750,000 and \$625,000, 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 applying the recognition requirements in ASC 842 to 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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

As of December 31, 2021 and 2020, the right-of-use asset and lease liability are as follows (in thousands):

	<u>2021</u>	<u>2020</u>
Operating lease right-of-use asset	\$ 2,570	\$ 3,119
Operating lease liability:		
Other current liabilities	616	580
Other long-term liabilities	<u>2,262</u>	<u>2,878</u>
	<u>\$ 2,878</u>	<u>\$ 3,458</u>

During the years ended December 31, 2021 and 2020, NAS had the following cash and non-cash activities associated with leases (in thousands):

	<u>2021</u>	<u>2020</u>
Cash paid for amounts included in the measurement of the lease liability		
Operating cash flows from operating leases	\$ 663	\$ 644
Lease costs:		
Operating lease	632	632
Short-term lease	<u>76</u>	<u>56</u>
	<u>\$ 708</u>	<u>\$ 688</u>

The maturity of the lease liability under NAS' operating lease as of December 31, 2021 is as follows (in thousands):

<u>Years Ending December 31,</u>	<u>Operating Leases</u>
2022	\$ 683
2023	704
2024	725
2025	746
2026	<u>188</u>
Total lease payments	3,046
Less: imputed interest	<u>(168)</u>
Total lease liability	<u>\$ 2,878</u>

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.

NATIONAL ACADEMY OF SCIENCES

Notes to the Financial Statements

December 31, 2021 and 2020

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, 2020. 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.

The COVID-19 pandemic continues to have a broad impact on commerce and financial markets around the world. The extent to which COVID-19 may impact NAS' future financial position, changes in net assets, and cash flows is uncertain. The accompanying financial statements include no adjustments relating to the effects of this pandemic. NAS has and will continue to make every effort to mitigate the current and future financial impacts of COVID-19.

NOTE 16 - SUBSEQUENT EVENTS

NAS evaluated its December 31, 2021 financial statements for subsequent events through June 14, 2022, 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.

National Academy of Sciences

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS

For the year ended December 31, 2021
(in thousands)

Assistance Listing Agency Designation	Agency	Advisory and Research	Fellowship and Other Support of Scholars	Pass-through Funding	Funding to Subrecipients	Total
98.000	AID - U.S. Agency for International Development	\$ 2,791	\$ 189	\$ -	\$ 7,187	\$ 10,167
12.000	AIRF - Department of the Air Force	1,914	6,951	192	-	9,057
99.999	AOC - Architect of the Capitol	10	-	-	-	10
12.000	ARMY - Department of the Army	3,364	3,267	-	-	6,631
93.424	CDC - Centers for Disease Control and Prevention	2,767	-	214	491	3,472
11.000	CMRC - Department of Commerce	3,208	2,966	-	-	6,174
93.000	DHHS - Department of Health and Human Services	19,527	-	352	99	19,978
97.000	DHS - Department of Homeland Security	1,530	-	-	-	1,530
12.000	DOD - Department of Defense	2,635	-	-	-	2,635
81.000	DOE - Department of Energy	6,899	116	377	28	7,420
17.000	DOL - Department of Labor	449	-	-	-	449
20.000	DOT - Department of Transportation	35,714	436	540	37,137	73,827
12.000	DTRA - Defense Threat Reduction Agency	105	458	-	88	651
84.000	EDUC - Department of Education	1,266	-	-	-	1,266
66.000	EPA - Environmental Protection Agency	2,410	462	293	-	3,165
93.103	FDA - U.S. Food and Drug Administration	884	-	-	-	884
91.000	GAO - U.S. Government Accountability Office	217	-	-	-	217
39.000	GSA - General Services Administration	60	-	-	-	60
14.000	HUD - Housing and Urban Development	49	-	-	-	49
15.000	INTR - Department of the Interior	1,388	-	1	27	1,416
43.000	NASA - National Aeronautics and Space Administration	7,626	-	-	962	8,588
12.000	NAVY - Department of Navy	1,201	11,643	123	21	12,988
45.000	NEH - National Endowment for the Humanities	101	-	-	-	101
12.900	NSA - National Security Agency	-	87	-	-	87
47.000	NSF - National Science Foundation	11,101	177	138	312	11,728
12.000	ODNI - Office of the Director of National Intelligence	3,251	-	-	-	3,251
96.000	SSA - Social Security Administration	3,261	-	-	-	3,261
19.000	STAT - Department of State	1,339	624	280	34	2,277
21.000	TRSY - Department of the Treasury	20	-	-	-	20
10.000	USDA - U.S. Department of Agriculture	1,028	-	-	19	1,047
12.750	USUHS - Uniformed Services University of the Health Sciences	40	198	-	-	238
64.000	VA - Department of Veterans Affairs	2,445	-	-	100	2,545
99.999	WH - The White House	166	-	-	-	166
Total Expenditures of Federal Awards		\$ 118,766	\$ 27,574	\$ 2,510	\$ 46,505	\$ 195,355

The accompanying detailed schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
Function: Advisory and Research Activities:						
AID - U.S. Agency For International Development:						
AID	10000242	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	\$ 1,817	\$ 5,660	\$ 7,477
AID	10002295	AID-263-A-15-00002	U.S.-Egypt Joint Science and Technology Fund	498	1,527	2,025
AID	10004113	7200AA18GR00003	Forum on Microbial Threats	142	-	142
AID	10005223	72026321CA00001	U.S.-Egypt Science and Technology (S&T) Joint Fund (II)	334	-	334
Total AID - U.S. Agency For International Development:				<u>2,791</u>	<u>7,187</u>	<u>9,978</u>
AIRF - Department of the Air Force:						
AIRF	10000741	UNNUMBERED	Continuing Support of the Federal Facilities Council	44	-	44
AIRF	10003640	FA8052-17-P-0007	Roundtable on Genomics and Precision Health	1	-	1
AIRF	10003830	FA805117P0022	Air Force Affiliation Core Sponsorship Membership of the Transportation Research Board	75	-	75
AIRF	10003912	FA9550-16-D-0001/FA8650-18-F-9302	Air Force Science and Technology Futures	121	-	121
AIRF	10004370	FA9550-19-1-0333	2019, 2020 and 2021 U.S. Frontiers of Engineering Symposia	56	-	56
AIRF	10004471	UNNUMBERED	Continuing Support to the Federal Facilities Council	1	-	1
AIRF	10004500	FA9550-16-D-0001/FA8650-19-F-9301	Improving Defense Acquisition Workforce Capability in Data Use	99	-	99
AIRF	10004505	FA9550-19-1-0330	The Decadal Survey in Astronomy and Astrophysics 2020 (ASTRO 2020)	19	-	19
AIRF	10004619	FA9550-16-D-0001/FA8650-19-F-9302	Managing the Information Enterprise Roundtable in a Digital Air Force	74	-	74
AIRF	10004637	UNNUMBERED	Federal Facilities Council	10	-	10
AIRF	10004751	FA9550-16-D-0001/FA8650-19-F-9303	Energy Challenges and Opportunities for Future Data-Driven Operations in the United States Air Force	171	-	171
AIRF	10004835	FA9550-16-D-0001/FA8650-20-F-9309	Managing Council	301	-	301
AIRF	10004870	FA9550-16-D-0001/FA8650-20-F-9312	Adapting to Shorter Time Cycles: A Workshop Series for the United States Air Force	84	-	84
AIRF	10004947	FA9550-16-D-0001/FA8650-20-F-9311	Air Force Development Planning Roundtable	95	-	95
AIRF	10005040	FA9550-16-D-0001/FA8650-20-F-9314	Advanced Battle Management System Technology Workshop	317	-	317
AIRF	10005368	FA955016D0001/FA8650-21-F-9308	Digital Strategy: A Workshop Series for the Department of the United States Air Force	221	-	221
AIRF	10005396	FA955016D0001/FA8650-21-F-9309	Federal Communication Commission Order 20-48 Study	190	-	190
AIRF	10005590	FA955016D00001/FA8650-21-F-9322	Space Service Acquisition Executive Meeting of Experts	16	-	16
AIRF	10005591	FA955016D00001/FA8650-21-F-9323	Testing and Evaluating Artificial Intelligence Workshop & Study	19	-	19
Total AIRF - Department of the Air Force:				<u>1,914</u>	<u>-</u>	<u>1,914</u>
AOC - Architect of the Capitol:						
AOC	10005302	AOC SAB21P0053	DEPS BICE FFC Membership Dues 2021	10	-	10
Total AOC - Architect of the Capitol:				<u>10</u>	<u>-</u>	<u>10</u>
ARMY - Department Of The Army:						
ARMY	10003569	UNNUMBERED	Marine Board of the National Academies - General Program Support	41	-	41
ARMY	10003976	W911NF-18-D-0002, TO# 1	Board on Army Research and Development	1,161	-	1,161
ARMY	10004137	W911NF-18-D-0002/W911NF18F0089	Science and Innovation Leadership for the 21st Century: Challenges and Strategic Implications for the United States	305	-	305
ARMY	10004248	W911NF-19-1-0012	Generational Issues: Workforce Management and Employment Practices	73	-	73
ARMY	10004300	W911NF-18-D-0002/W911NF18F0092	Roundtable on Linking Academic Engineering Research and Defense Basic Science	84	-	84
ARMY	10004327	W911NF-19-1-0037	Support for Activities of the NRC Board on Human-Systems Integration	13	-	13
ARMY	10004579	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	41	-	41
ARMY	10004792	UNNUMBERED	Core Support for the Marine Board Program	8	-	8
ARMY	10004798	W911QX20C0008	Army Research Laboratory Technical Assessment Board (ARLTAB)	414	-	414
ARMY	10004910	W912HQ20P0074	DEPS BICE Federal Facilities Council Membership Dues 2020	25	-	25
ARMY	10004931	W912EP-21-2-0001	Independent Scientific Review of Everglades Restoration Progress	253	-	253

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
ARMY - Department of the Army (Continued):						
ARMY	10004934	W911NF-18-D-0002/W911NF20F0056	Engagement by DOD with its Manufacturing Innovations Institutes Phase II Study	\$ 362	\$ -	\$ 362
ARMY	10005241	W911NF-18-D-0002/W911NF21F0006	Army Futures Command Research Budget Realignment	369	-	369
ARMY	10005361	W911NF-18-D-0002/W911NF21F0010	Ultra-High Temperature Materials for Defense Applications	6	-	6
ARMY	10005364	W911NF-18-D-0002/W911NF21F0012	Convergent Manufacturing: A Future of Addictive, Subtractive and Transformative Manufacturing: A Workshop	98	-	98
ARMY	5720	UNNUMBERED	Army COE Core Support	111	-	111
Total ARMY - Department of the Army:				<u>3,364</u>	<u>-</u>	<u>3,364</u>
CDC - Centers for Disease Control and Prevention:						
CDC	10003648	200-2011-38807, TO# 60	Evidence-Based Practices for Public Health Emergency Preparedness and Response: Assessment and Recommendations for the Field	27	-	27
CDC	10003928	NU2GGH002130-01-00	Evaluation of Human Resources for Health in the Republic of Rwanda under the President's Emergency Plan for AIDS Relief (PEPFAR)	10	38	48
CDC	10004558	200-2011-38807/75D30119F00076	Standing Committee on Personal Protective Equipment for Workplace Safety and Health	108	-	108
CDC	10004658	200-2011-38807/75D30119F00081	Workshop on Conformity Assessment for Respiratory Protective Devices	33	-	33
CDC	10004966	200-2011-38807/75D30120F00085	Emerging Science on Indoor Chemistry	67	-	67
CDC	10005013	200-2011-38807/75D30120F00086	Committee on Respiratory Protection for the Public and Workers without Respiratory Protection Programs at their Workplaces	594	-	594
CDC	10005022	75D30120P09734	Committee on Geological and Geotechnical Engineering (COGGE) and its Activities	21	-	21
CDC	10005025	75D30120P09183	Committee on Earth Resources and its Activities	22	-	22
CDC	10005045	200-2011-38807/75D30120F00090	The Chemistry of Urban Wildfire	81	-	81
CDC	10005054	200-2011-38807/75D30120F00087	Promoting Emotional Well-being and Resilience	233	453	686
CDC	10005070	200-2011-38807/75D30120F00084	Forum on Microbial Threats	52	-	52
CDC	10005093	200-2011-38807/75D30120F00089	Continued Support of the National Cancer Policy Forum	415	-	415
CDC	10005117	75D30120P08884	Action Collaborative on Countering the U.S. Opioid Epidemic	10	-	10
CDC	10005118	200-2011-38807/75D30120F00088	Guidance on PFAS Testing and Health Outcomes	360	-	360
CDC	10005131	200-2011-38807/75D30120F00092	Standing Committee on Personal Protective Equipment for Workplace Safety and Health	178	-	178
CDC	10005172	200-2011-38807/75D30120F00093	Forum on Medical and Public Health Preparedness for Catastrophic Events	37	-	37
CDC	10005173	200-2011-38807/75D30120F00091	Environmental Health Matters Initiative	44	-	44
CDC	10005342	200-2011-38807/75D30121F00094	COVID-19 Vaccine Safety Review	54	-	54
CDC	10005402	200-2011-38807/75D30121F00096	Forum for Children's Well-Being: Promoting Cognitive, Affective and Behavioral Health for Children and Youth	48	-	48
CDC	10005492	75D30121P11690	Committee on Earth Resources (CER)	20	-	20
CDC	10005508	200-2011-38807/75D30121F00099	Guidance on PFAS Testing and Health Outcomes	99	-	99
CDC	10005511	200-2011-38807/75D30121F00098	Environmental Health Matters Initiative	54	-	54
CDC	10005538	200-2011-38807/75D30121F00101	Standing Committee on Personal Protective Equipment for Workplace Safety and Health (COPPE)	24	-	24
CDC	10005542	200-2011-38807/75D30121F00100	SC for Public Health Preparedness and Response	41	-	41
CDC	10005552	200-2011-38807/75D30121F00102	Building Public Trust in Public Health Emergency Preparedness and Response (PHEPR) Science: A Workshop	3	-	3
CDC	10005588	200-2011-38807/75D30121F00103	Analysis to Enhance the Effectiveness of the Federal Quarantine Station Network based on Lessons from the COVID-19 Pandemic	113	-	113
CDC	10005623	75D30121D11240/75D30121F00002	National Cancer Policy Forum	19	-	19
Total CDC - Centers for Disease Control and Prevention:				<u>2,767</u>	<u>491</u>	<u>3,258</u>
CMRC - Department of Commerce:						
CMRC	10003126	YA1323-16-SE-0059	NAS Committee on National Statistics (CNSTAT) Core Support	63	-	63
CMRC	10003947	1331L519P13210025	CNSTAT Core Support	52	-	52
CMRC	10004214	SBI34117CQ0017/1333ND18FNB400154	Advancing Commercialization from Federal Laboratories	73	-	73

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
CMRC - Department of Commerce (Continued):						
CMRC	10004492	60NANB19D146	Opportunities for Measurement Science Research at NIST to Advance the Trustworthiness of AI Systems: A Workshop	\$ 41	\$ -	\$ 41
CMRC	10004517	NA19OAR4310224	Ocean Studies Board and Board on Atmospheric Sciences and Climate in Support of NOAA's Mission 2019-2024	287	-	287
CMRC	10004616	WC133R17CQ0031/1305M319FNRMA0203	Review of the Marine Recreational Information Program's Suitability for Supporting Management of Fisheries with Annual Catch Limits	216	-	216
CMRC	10004706	WC133R17CQ0031/1305M319FNRMA0180	Space Weather Operations and Research Infrastructure Workshop	48	-	48
CMRC	10004715	WC133R17CQ0031/1305M319FNRMA0179	Study on Limited Access Privilege Programs in Mixed-Use Fisheries	222	-	222
CMRC	10004717	UNNUMBERED	Federal Facilities Council	10	-	10
CMRC	10004782	SB134117CQ0017/1333ND20FNB100016	Assessment of the Technical Quality of the Materials Measurement Laboratory (MML) and the Engineering Laboratory (EL) of the National Institute of Standards and Technology	275	-	275
CMRC	10004873	SB134117CQ0017/1333ND20FNB100131	Addressing the Underrepresentation of Women of Color in Tech	50	-	50
CMRC	10004875	WC133R17CQ0031/1305M320FNRMA0052	U.N. Decade of Ocean Science for Sustainable Development: U.S. National Committee and Engagement Coordination Center	86	-	86
CMRC	10004880	60NANB20D131	Forum on Cyber Resilience	1	-	1
CMRC	10004965	NA20NOS0080113	Marine Board General Program Support, 2020-2021	26	-	26
CMRC	10004980	1331L520P13210057	Expert meeting for BEA on Expert Guidance and Feedback on Distributional Measures of Personal Income	4	-	4
CMRC	10004992	WC133R17CQ0031/1305M320FNRMA0082	United States Contributions to Global Ocean Plastic Waste	334	-	334
CMRC	10005111	SB134117CQ0017/1333ND20FNB100250	Addressing the Underrepresentation of Women of Color in Tech	8	-	8
CMRC	10005124	SB134117CQ0017/1333ND20FNB730220	The Chemistry of Urban Wildfire	65	-	65
CMRC	10005185	UNNUMBERED	Mapping Science Committee and its Activities	1	-	1
CMRC	10005235	SB134117CQ0017/1333ND21FNB640003	Enhancing the U.S. Chemical Economy through Investments	4	-	4
CMRC	10005239	SB134117CQ0017/1333ND21FNB100011	Assessment of the Technical Quality of the NIST Center for Neutron Research, Physical Measurement Laboratory and Information Technology Laboratory, 2021	729	-	729
CMRC	10005307	UNNUMBERED	DEPS BICE FFC Membership Dues 2021	9	-	9
CMRC	10005400	1333LB21D00000003/1333LB21F00000121	Evaluate the Quality of the 2020 Census	387	-	387
CMRC	10005411	NA21NOS0080141	Marine Board General Program Support, 2021-2022	28	-	28
CMRC	10005432	1333LB21D00000003/1333LB21F00000111	Core Support for the Committee on National Statistics	99	-	99
CMRC	10005460	60NANB21D111	Support for the Core Activities and Workshops of CSTB	3	-	3
CMRC	10005503	SB134117CQ0017/1333ND21FNB190206	Technical Assessment of the Capital Facility Needs of the NIST	41	-	41
CMRC	10005544	1333LB21D00000003/1333LB21F00000248	Roadmap for Disclosure Avoidance in the Survey of Income	5	-	5
CMRC	10005602	SB134117CQ0017/1333ND22FNB100006	Assessment of the Technical Quality of the NIST Communications Technology Laboratory	41	-	41
Total CMRC - Department of Commerce:				3,208	-	3,208
DHHS - Department of Health and Human Services:						
DHHS	10003748	HHS2502015000011/HHS25034010T	Roundtable Health Literacy	50	-	50
DHHS	10003757	HHS2502015000011/HHS25034009T	Roundtable on the Promotion of Health Equity and the Elimination of Health Disparities	41	-	41
DHHS	10004131	HHSP233201400020B/HHSP23337076	Comprehensive Addiction and Recovery Act Outcomes Review (CARA-OR)	252	-	252
DHHS	10004161	HHSP233201400020B/HHSP23337078	Approaches to Estimating the Prevalence of Human Trafficking in the United States: A Workshop	16	-	16
DHHS	10004179	HHSN263201800029I/HHSN26300011	Forum on Microbial Threats	105	-	105
DHHS	10004180	HHSN263201800029I/HHSN26300010	Roundtable on Genomics and Precision Health	131	-	131
DHHS	10004181	HHSN263201800029I/HHSN26300007	Forum on Drug Discovery, Development, and Translation	428	-	428
DHHS	10004182	HHSN263201800029I/HHSN26300008	National Cancer Policy Forum	201	-	201
DHHS	10004188	HHSN263201800029I/HHSN26300023	Partial Support for the Food Forum	15	-	15
DHHS	10004190	HHSN263201800029I/HHSN26300036	Consensus Study on Rising Midlife Mortality Rates and Socioeconomic Disparities	62	-	62
DHHS	10004192	HHSN263201800029I/HHSN26300029	Partial Support for the Core Activities of the Committee on Population (CPOP)	91	-	91

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DHHS - Department of Health and Human Services (Continued):					
DHHS	10004193	HHSN263201800029I/HHSN26300028	\$ 93	\$ -	\$ 93
DHHS	10004195	HHSN263201800029I/HHSN26300003	557	-	557
DHHS	10004196	HHSN263201800029I/HHSN26300019	37	-	37
DHHS	10004199	HHSN263201800029I/HHSN26300012	25	-	25
DHHS	10004206	HHSN263201800029I/HHSN26300014	122	-	122
DHHS	10004209	HHSP233201400020B/HHSP23337086	1	-	1
DHHS	10004211	HHSN263201800029I/HHSN26300018	245	-	245
DHHS	10004215	HHSN263201800029I/ HHSN26300021	113	-	113
DHHS	10004219	HHSN263201800029I/HHSN26300027	75	-	75
DHHS	10004230	HHSN263201800029I/HHSN26300022	134	99	233
DHHS	10004232	HHSN263201800029I/HHSN26300020	158	-	158
DHHS	10004243	HHSN263201800029I/HHSN26300026			
		Collaborative on Disaster Research Response	163	-	163
DHHS	10004244	HHSN263201800029I/HHSN26300025	27	-	27
DHHS	10004285	HHSP233201400020B/HHSP23337080	85	-	85
DHHS	10004321	HHSO100201850012A	12	-	12
DHHS	10004365	HHSN263201800029I/75N98019F00469	655	-	655
DHHS	10004396	75FCMC19P0002	4	-	4
DHHS	10004420	HHSN263201800029I/75N98019F00848	35	-	35
DHHS	10004424	HHSN263201800029I/75N98019F00847	261	-	261
DHHS	10004426	75N98019F00849	219	-	219
DHHS	10004464	HHSP233201400020B/HHSP23337092	1	-	1
DHHS	10004470	75N98019F00850			
		Well-Being of Sexual and Gender Minority Populations	2	-	2
DHHS	10004491	75A50119C00031	97	-	97
DHHS	10004581	HHSP233201400020B/75P00119F37095	8	-	8
DHHS	10004633	HHSN263201800029I/75N98019F00855			
		Supporting the Whole Student: Mental Health, Substance Use, and Well-Being Among Learners in Higher Education	63	-	63
DHHS	10004644	75Q80119P00006	11	-	11
DHHS	10004664	HHSN263201800029I/75N98019F00860	45	-	45
DHHS	10004716	HHSN263201800029I/75N98019F00866	589	-	589
DHHS	10004728	2E2CMS331745-01-00	190	-	190
DHHS	10004730	HHSN263201800029I/75N98019F00861			
		Examination of the Scientific, Ethical and Regulatory Issues Associated with Neural Chimeras and Neural Organoid Research	19	-	19
DHHS	10004746	HHSN263201800029I/75R60219F34018	118	-	118
DHHS	10004771	HHSP233201400020B/75P00119F37098			
		Implementing High-Quality Primary Health Care	39	-	39
DHHS	10004888	75A50120C00006	30	-	30
DHHS	10004914	75H701-20-P-00018	10	-	10
DHHS	10004915	UNNUMBERED	20	-	20
DHHS	10004941	75A50120C00093	240	-	240
DHHS	10004960	HHSN263201800029I/75R60220F34021	34	-	34
DHHS	10004982	HHSN263201800029I/75N98020F00005			
		Improving the Characterization and Translation of Research Gaps in Evidence-Based Clinical Prevention	801	-	801

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DHHS - Department of Health and Human Services (Continued):						
DHHS	10004997	HHSN263201800029I/75N98020F00001	Expanding Activities Developing a Behavioral and Social Science Research Agenda on Alzheimer's Disease and Alzheimer's Disease-Related Dementias (AD/ADRD) : A Decadal Survey	\$ 362	\$ -	\$ 362
DHHS	10005015	75A50120C00129	Committee on America's Medical Product Supply Chain Security	810	-	810
DHHS	10005017	HHSN263201800029I/75N98020F00002	Review of the Revised NTP Monograph on Systematic Review of Fluoride Exposure and Neurodevelopmental and Cognitive Health Effects	58	-	58
DHHS	10005028	HHSN263201800029I/75N98020F00003	Examining the Long-Term Medical and Economic Impact of Antimicrobial Resistance in the United States	979	-	979
DHHS	10005043	HHSN263201800029I/75N98020F00010	Accelerating Social and Behavioral Science Through Ontology Development and Use	442	-	442
DHHS	10005052	HHSN263201800029I/75N98020F00006	Congressionally Mandated Assessment of NIH Research on Autoimmune Diseases	883	-	883
DHHS	10005059	HHSN250201500001I/75R60220F34022	Forum for Children's Wellbeing: Promoting Cognitive, Affective, and Behavioral Health for Children and Youth	50	-	50
DHHS	10005085	HHSN263201800029I/75N98020F00014	Workshop on Developing Evaluation Metrics for Sexual Harassment Prevention Efforts	273	-	273
DHHS	10005086	HHSN263201800029I/75N98020F00011	A Fairer and More Equitable Cost-Effective and Transparent System of Donor Organ Procurement, Allocation, and Distribution	817	-	817
DHHS	10005094	HHSN263201800029I/75N98020F00025	Partial Support for the Core Activities of the Board on Health Care Services	107	-	107
DHHS	10005097	HHSN263201800029I/75N98020F00008	Mitigating the Impact COVID-19 on the Careers of Women in Academic Science, Engineering and Medicine	30	-	30
DHHS	10005100	HHSP233201400020B/75P00120F37100	Workshop on Coordinated Service Delivery for Children and Youth During Disasters	136	-	136
DHHS	10005104	HHSN263201800029I/75N98020F00009	Emerging Science on Indoor Chemistry	88	-	88
DHHS	10005112	HHSN263201800029I/75N98020F00012	Guidance on PFAS Testing and Health Outcomes	422	-	422
DHHS	10005119	HHSN263201800029I/75N98020F00026	A Workshop to Identify Methods to Improve Response/Retention and Enhance Consent Protocols for Biomarker and Program (Administrative) Data Linkage in Nationally Representative Longitudinal Studies of Older Americans	147	-	147
DHHS	10005120	75FCMC20P0024	Leadership Consortium for a Value & Science -Driven Health System	110	-	110
DHHS	10005125	HHSP233201400020B/75P00120F37102	Building Data Capacity for Patient Centered Outcomes – An Agenda for 2021 to 2030	674	-	674
DHHS	10005132	HHSN263201800029I/75N98020F00023	Improving the Representation of Women and Underrepresented Minorities in Clinical Trial and Research	620	-	620
DHHS	10005134	HHSN263201800029I/75N98020F00021	Pre-clinical Diagnosis of Alzheimer's Disease (AD) and AD-related Dementias (ADRD): How Biomarkers and Other Pre-Clinical Diagnostics May Change AD/ADRD Research and Clinical Care	174	-	174
DHHS	10005136	HHSN263201800029I/75N98020F00022	Patterns of Use and Health Effects of "Premium Cigars" and Priority Research	775	-	775
DHHS	10005138	HHSN263201800029I/75N98020F00015	Partial Core Support for the National Science, Technology and Security Roundtable	25	-	25
DHHS	10005140	HHSN263201800029I/75N98020F00019	Update to the Guide for the Care and Use of Animals (Phase I)	108	-	108
DHHS	10005149	HHSN263201800029I/75N98020F00016	Standing Committee on Evidence Synthesis and Communications in Diet and Chronic Disease Relationships	199	-	199
DHHS	10005152	HHSN263201800029I/75N98020F00013	The Chemistry of Urban Wildfire	82	-	82
DHHS	10005167	75FCMC20P0042	Action Collaborative on Countering U.S. Opioid Epidemic	20	-	20
DHHS	10005175	HHSN263201800029I/75N98020F00024	Partial Support for International Council of Laboratory Animal Science (ICLAS), Institute for Laboratory Animal Research (ILAR) Roundtable and ILAR Council	23	-	23
DHHS	10005181	HHSN263201800029I/75N98020F00018	The Role of Companion Animals as Sentinels for Predicting Environmental Exposure Effects of Aging and Cancer Susceptibility in Humans: A Workshop	34	-	34
DHHS	10005182	HHSN263201800029I/75N98020F00017	Addressing Diversity, Equity, Inclusion, and Anti-Racism in 21st Century STEM Organization	239	-	239
DHHS	10005189	HHSP233201400020B/75P00120F37108	Forum on Mental Health and Substance Use Disorders	26	-	26
DHHS	10005196	HHSN263201800029I/75N98020F00020	Changing the Culture of Data Management and Sharing: A Workshop	146	-	146
DHHS	10005197	HHSP233201400020B/75P00120F37106	Exploring the Opportunity Gap for Young Children from Birth to Age Eight	87	-	87
DHHS	10005201	HHSP233201400020B/75P00120F37104	Forum on Aging, Disability, and Independence	55	-	55
DHHS	10005217	HHSP233201400020B/75P00120F37105	Advancing Pandemic and Seasonal Influenza Vaccine Preparedness	2,518	-	2,518

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DHHS - Department of Health and Human Services (Continued):					
DHHS	10005270	HHSN263201800029I/75N98021F00001	\$ 209	\$ -	\$ 209
DHHS	10005271	HHSN263201800029I/75N98021F00002	21	-	21
DHHS	10005277	75Q80121P00003			
DHHS	10005283	HHSN263201800029I/75N98021F00003	71	-	71
DHHS	10005308	75H701-21-P-00020	85	-	85
DHHS	10005357	HHSP233201400020B/75P00120F37103	10	-	10
DHHS	10005377	HHSN263201800029I/75N98021F00004	36	-	36
DHHS	10005458	75A50121C00061	100	-	100
DHHS	10005501	HHSN263201800029I/75N98021F00007	380	-	380
DHHS	10005512	HHSN263201800029I/75N98021F00011	6	-	6
DHHS	10005513	HHSN263201800029I/75N98021F00015	2	-	2
DHHS	10005520	HHSN263201800029I/75N98021F00018	5	-	5
DHHS	10005531	HHSN263201800029I/75N98021F00009	19	-	19
DHHS	10005535	HHSN263201800029I/75N98021F00006	82	-	82
DHHS	10005537	75R60221D00002/75R60221F34002	12	-	12
DHHS	10005546	HHSN263201800029I/75N98021F00010	31	-	31
DHHS	10005547	HHSN263201800029I/75N98021F00014	13	-	13
DHHS	10005553	HHSN263201800029I/75N98021F00008	51	-	51
DHHS	10005561	HHSN263201800029I/75N98021F00013	51	-	51
DHHS	10005608	75ACF121C00093	3	-	3
DHHS	10005630	HHSP233201400020B/75P00121F37109	7	-	7
DHHS	10005633	HHSP233201400020B/75P00121F37112	18	-	18
DHHS	10005639	HHSP233201400020B/75P00121F37111	22	-	22
DHHS	10005675	75Q801222P00002	12	-	12
DHHS	5294-073	N01-OD-4-2139, TO# 175			
Total DHHS - Department of Health and Human Services:			19,527	99	19,626
DHS - Department of Homeland Security:					
DHS	10004039	HSHQDC-17-A-B0001/70RHAD18FR0000003	73	-	73
DHS	10004414	HSHQDC-17-A-B0001-70FBTX19F00000007	118	-	118
DHS	10004583	HSHQDC-17-A-B0001/70Z03219FPE6R0200	16	-	16
DHS	10004916	70RDAD20P00000026	26	-	26
DHS	10004948	HSHQDC-17-A-B0001/70Z02320FMWP03700	50	-	50
DHS	10005190	HSHQDC-17-A-B0001/70Z02320FMMC13500	50	-	50
DHS	10005194	HSHQDC-17-A-B0001/70Z02320QMSE05800	448	-	448
DHS	10005202	HSHQDC-17-A-B0001/70FA6020F00000067	165	-	165
DHS	10005310	70RDAD21P00000039	365	-	365
DHS	10005363	70RSAT21G00000003/70RSAT21FR00000029	13	-	13
DHS	10005380	70RSAT21G00000003/70Z02321FMWP02000	33	-	33
DHS	10005445	70RSAT21G00000003/70Z02321FMPP05300	16	-	16
DHS	10005586	70RSAT21G00000003/70RSAT21FR00000126	15	-	15
DHS	10005604	70RSAT21G00000003/70FA6021F00000068	13	-	13
Total DHS - Department of Homeland Security:			32	-	32

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DHS - Department of Homeland Security (Continued):					
DHS	10005612	70RSAT21G0000003/70Z02321FVPAE0400	\$ 81	\$ -	\$ 81
DHS	10005619	70RSAT21G0000003/70Z02321FPE2S0200	17	-	17
DHS	10005632	70RSAT21G0000003/70RDAD21FR0000159	49	-	49
Total DHS - Department of Homeland Security:			1,530	-	1,530
DOD - Department of Defense:					
DOD	10003254	W911NF-17-1-0330	179	-	179
DOD	10003881	HR00111810002	7	-	7
DOD	10004507	W81XWH20C0126	597	-	597
DOD	10005051	HQ003420C0180	461	-	461
DOD	10005061	W911NF-18-D-0002/W911NF20F0052	203	-	203
DOD	10005115	W911NF-18-D-0002/W911NF20F0053	745	-	745
DOD	10005234	W81K0419D0026/W81K0420F1139	196	-	196
DOD	10005350	HQ003421C0044	119	-	119
DOD	10005442	HQ003421C0097	83	-	83
DOD	10005530	W81K0419D0026/W81K0421F0217	45	-	45
Total DOD - Department of Defense:			2,635	-	2,635
DOE - Department of Energy:					
DOE	09-118-01	DE-EM0001172			
Independent Assessment of Science and Technology for the Department of Energy's Defense					
Environmental Cleanup Program Under the COOP for NRSB Board and Related Activities			375	-	375
DOE	10000254	DE-HS0000031	1,891	-	1,891
DOE	10003111	DE-NA0003381			
Support of Activities of the NAS in Relation to the Radiation Effects Research Foundation					
A Study to Review Governance Reform in the National Nuclear Security Administration and					
A Roundtable on Weapons Activities of the National Nuclear Security Administration			11	-	11
DOE	10003962	DE-SC0019328	95	-	95
Partial Core Support of the Board on Physics and Astronomy					
DOE	10004002	DE-EP0000026/89233118FNA400038	117	-	117
U.S.-China Technical Dialogue on Nuclear and International Security 2018-2023					
DOE	10004011	DE-EP0000026/89233118FNA400039	197	-	197
U.S.-India Technical Dialogue on Nuclear and International Security 2018-2023					
DOE	10004012	DE-EP0000026/89233118FNA400040	283	-	283
U.S.-Russia Technical Dialogue on Nuclear and International Security 2018-2023					
DOE	10004090	DE-SC0020665	62	-	62
Board on Earth Sciences and Resources & Its Activities					
DOE	10004157	DE-SC0019159	25	-	25
Chemical Engineering: Challenges and Opportunities					
DOE	10004173	DE-EP0000026/89303018FFE400005	27	-	27
Chemical Engineering in the 21st Century: Challenges and Opportunities					
DOE	10004217	DE-EP0000026/89303018FOE400001	307	-	307
Advanced Grid Research and Development Evaluation					
DOE	10004281	DE-SC0019513	374	-	374
The Decadal Survey in Astronomy and Astrophysics 2020 (ASTRO 2020)					
DOE	10004313	DE-EP0000026/89233118FNA400124	295	-	295
Enhancing U.S. Nuclear Forensics and Attribution Capabilities					
DOE	10004324	DE-EP0000026/89243420FEE400139	44	-	44
Chemical Engineering in the 21st Century: Challenges and Opportunities					
DOE	10004598	DE-SC0020408	40	-	40
Partial Support of the Condensed Matter and Materials Research Committee					
DOE	10004617	DE-SC0020446			
Support for the Core Research Activities and Studies of the Computer Science and					
Telecommunications Board, DOE			46	-	46
DOE	10004620	DE-EP0000026/89243419FEE400089	18	-	18
Peer Review of the Appliance Standards Program's Analytical Methodologies					
DOE	10004636	DE-EP0000026/892434-19-F-EE400097			
Fisheries Research and Monitoring for Atlantic Offshore Development: A Workshop Dissemination:					
Special Issue of Oceanography			1	25	26
DOE	10004656	DE-EP0000026/89243420FEE400168	16	-	16
Committee on Earth Resources and its Activities					
DOE	10004750	89303019PMA000138	75	-	75
Federal Facilities Council					
DOE	10004803	DE-AR0001223	10	-	10
Partial Support of a Workshop to Explore a Dynamic Soil Information System					
DOE	10004900	DE-SC0021108			
The Role of Quantum Science Concepts in Enhancing Sensing and Imaging Technologies:					
Applications for Biology			173	-	173
DOE	10004932	DE-SC0021079			
Enhancing the U.S. Chemical Economy through Investments in Fundamental Research in the					
Chemical Sciences			169	-	169

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOE - Department of Energy (Continued):					
DOE	10004939	DE-EP0000026/89233120FNA400280	\$ 348	\$ -	\$ 348
DOE	10004964	DE-SC0021427	3	-	3
DOE	10004986	DE-EP0000026/89243220FNE400048			
		Review of Capabilities for Verification, Detection and Monitoring Nuclear Weapons & Fissile Materials			
		A Decadal Survey of Elementary Particle Physics			
		Merits and Viability of Different Nuclear Fuel Cycles and Technology Options and the Waste Aspects of Advanced Nuclear Reactors	421	-	421
DOE	10005012	DE-SC0020922	150	-	150
DOE	10005169	DE-EP0000026/89233121FNA400329	308	-	308
DOE	10005273	89243321PEE000015			
		Key Goals and Innovations Needed for a U.S. Compact Fusion Pilot Plant			
		A Decadal Assessment of High Energy Density Physics			
		Energy Efficiency Renewable Energy Sustainable Transportation Office Support for Transportation Research Board	75	-	75
DOE	10005349	DE-SC0021898	35	-	35
DOE	10005395	DE-SC0021652	155	-	155
DOE	10005401	DE-EM0005239	213	-	213
DOE	10005402	DE-EP0000026-89233121FNA400371	143	-	143
DOE	10005472	89233121DNA000035/89303021FOE400005	29	-	29
DOE	10005497	DE-EP0000026/89303021FFE00026	76	-	76
DOE	10005616	89243321PEE000017	9	-	9
DOE	8266	DE-FG02-07ER15872	283	-	283
		Board on Chemical Sciences and Technology			
		Total DOE - Department of Energy:	6,899	25	6,924
DOL - Department of Labor:					
DOL	10004747	1625DC-19-C-0008			
		Consensus Panel Study on Improving Cost-of-Living Indexes and Consumer Inflation Statistics in the Digital Age	364	-	364
DOL	10004749	1625DC-19-C-0009	85	-	85
		Consensus Panel Study on Measuring the Transformation of Retail Trade and Related Activities			
		Total DOL - Department of Labor:	449	-	449
DOT - Department of Transportation:					
DOT	10001130	DTFAWA-12-A-80008	4,560	7,917	12,477
DOT	10001757	DTFH61-13-H-00024	786	15,605	16,391
DOT	10002993	DC-2016-011-00	243	43	286
DOT	10003616	DC-2017-012-00	6	144	150
DOT	10003717	DTFH6116D000056/0002	35	-	35
DOT	10003718	DTFH6116D000056/0003	13	-	13
DOT	10003719	DTFH6116D000056/0004	8	-	8
DOT	10003794	DTNH2217H00028	589	-	589
DOT	10003885	69A36518500110RRDDC	2	49	51
DOT	10004080	DC-2018-013-00	46	710	756
DOT	10004246	693JJ31850017	7,610	-	7,610
DOT	10004288	693JJ31950003	14,549	9,215	23,764
DOT	10004468	693JJ318D000012/693JJ319F000078	223	-	223
DOT	10004474	69A36519500570RRDDC	3	65	68
DOT	10004494	DC-2019-004-00	165	662	827
DOT	10004516	693JJ318D000012/693JJ319F000105	54	479	533
DOT	10004524	693JJ318D000012/693JJ319F000106	90	-	90
DOT	10004530	693JJ318D000012/693JJ319F000108	78	-	78
DOT	10004532	693JF71950001	42	-	42
DOT	10004533	693JJ318D000012/693JJ319F000083	15	167	182
DOT	10004552	693KA9-19-P-00025	13	-	13
DOT	10004623	693JJ318D000012/693JJ319F000158	50	-	50
DOT	10004725	692M15-19-T-00028	451	-	451
		ACRP - Airport Cooperative Research Program			
		National Cooperative Highway Research Program (NCHRP)			
		FY2016 Transit Cooperative Research Program			
		FY2017 Transit Cooperative Research Program			
		Long-term Infrastructure Performance Program (LTIP) Main Advisory Committee Meetings			
		Long-term Pavement Performance (LTPP) Expert Task Group			
		Long Term Infrastructure Performance (LTIP) Expert Task Group			
		Assessment of Technologies for Improving Economy for Light-Duty Vehicles Phase 3			
		Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)			
		FY2018 Transit Cooperative Research Program			
		Core Program Services for a Highway Research, Development and Technology Program			
		National Cooperative Highway Research Program			
		Corrosion of Buried Steel at New and In-Service Infrastructure			
		Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)			
		Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)			
		Performance Evaluation of FHWA's Research & Technology Programs			
		Research and Technology Coordination Committee (RTCC)			
		Policy Symposia on Emerging Trends in Transportation			
		National Academy of Sciences, Transportation Board/Marine Board			
		FHWA Infrastructure Research			
		FAA Reauthorization Act of 2018 Section 177 Lead Emissions Study			
		Innovative Freight Research Workshops			
		FAA Cybersecurity Workforce Study			

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOT - Department of Transportation (Continued):					
DOT	10004757	693JK418D80002L/693JK419F980014	UTC Clearinghouse 2019-20	\$ 52	\$ - \$ 52
DOT	10004765	693KA9-19-T-00004	Study on the Feasibility of In-Cabin Wheelchair Restraint Systems	360	- 360
DOT	10004793	693JJ32050001	Core Program Services for a Highway Research, Development and Technology Program	1,427	- 1,427
DOT	10004801	69A36520401600RRDDC	Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)	34	70 104
DOT	10004909	693JK418D800001/693JK420F960012	Transportation Resilience Metrics Study	461	- 461
DOT	10004930	693JK418D800001/69319520F300005	TRB Core Support Services	25	- 25
DOT	10004973	693JK320C000001	The Safe Transportation of Liquefied Natural Gas by Rail	404	- 404
DOT	10005002	DC-2020-008-00	Rail Safety Innovations Deserving Exploratory Analysis (Rail Safety IDEA)	2,100	564 2,664
DOT	10005010	693JJ318D000012/693JJ320F000125	NCHRP Project 20-05/Topic 52-19, Technological Capabilities of DOTs for Digital Project Management and Delivery	13	45 58
DOT	10005014	693JJ318D000012/693JJ320F000126	NCHRP Project 03-139 Next Generation of the USLIMITS2 Speed Limit Setting Expert System	1	23 24
DOT	10005063	693JJ318D000012/693JJ320F000173	NCHRP Project 17-71A, AASHTO Highway Safety Manual, 2nd Edition	9	208 217
DOT	10005083	693JJ318D000012/693JJ320F000174	NCHRP Project 08-139: Methods to Prevent Bridge Strikes by Trucks	-	10 10
DOT	10005171	693JK418D800001/693JK420F980008	Annual Meeting Affiliate Program 2020-21	20	- 20
DOT	10005180	693JK418D800002/693JJ920F000174	NHTSA Stakeholder Engagement and Strategic Program Development 2020-21	137	- 137
DOT	10005186	693KA9-20-P-00042	Titanium Titan Globe Affiliate Program	20	- 20
DOT	10005195	693JK418D800001/693JJ620F000069	Titanium Titan Package	20	- 20
DOT	10005214	693JK418D800001/693JK320F00022	Titanium Titan Globe Affiliate Program	20	- 20
DOT	10005222	693JK418D800001/6913G620F500045	Titanium Affiliate Program 2020-21	20	- 20
DOT	10005285	693JK418D800001/693JJ921F000002	TRB 2021 Conference Titanium titan Global Affiliate Program	25	- 25
DOT	10005326	693JK418D800001/693JJ421F000007	Titanium Titan Globe Affiliate	25	- 25
DOT	10005333	693JK418D800001/693JK421F9650003	Titanium Titan Global Affiliate Program	25	- 25
DOT	10005345	693JJ321P000007	Preparing for Automated Vehicles and Shared Mobility Forum	25	- 25
DOT	10005356	693JJ920P000043	Forum on Medical and Public Health Preparedness	53	- 53
DOT	10005425	693KA9-21-T-00009	Transport Airplane Risk Assessment Methodology	162	- 162
DOT	10005452	693JK321C000003	Study on Installation of Automatic or Remote-Controlled Shut-Off Valves	64	- 64
DOT	10005470	693JK418D800001/693JJ921F000069	NHTSA 2021-22 Core Program Sponsorship	95	- 95
DOT	10005473	693KA9-21-T-00011	Emerging Safety Trends in Aviation	155	- 155
DOT	10005496	693JK418D800001/693JJ621F000051	FRA 2021-22 Support for TRB Core Program Activities	20	- 20
DOT	10005506	DC-2021-016-00	FTA 2021-22 Core Program Sponsorship	167	- 167
DOT	10005525	693JJ921P000049	Forum on Medical and Public Health Preparedness for Disasters and Emergencies	11	- 11
DOT	10005585	DC-2021-018-00	FY2021 Transit Cooperative Research Program	-	3 3
DOT	10005587	693KA9-21-P-00046	TRB Core Program Sponsors Support	27	- 27
DOT	10005594	693JK418D800001/693JK421F985505	OST-R-2021-22 TRB Core Technical Support	49	- 49
DOT	10005609	693JK418D800001/6913G621F500044	Volpe Center 2021-22 TRB Core Technical Support	5	- 5
DOT	10005641	693JK418D800001/693JK421F9850004	Repurposing Plastics Waste in Infrastructure	38	- 38
DOT	10005644	693JK321C000007	OPS Federal Sponsorship for TRB	13	- 13
DOT	6107	DC-26-7243	The Surface Transportation Extension Act of 2004	1	- 1
Total DOT - Department of Transportation:			35,714	35,979	71,693
DTRA - Defense Threat Reduction Agency:					
DTRA	10005089	HDTRA121P0013	Anticipating Rare Events of Major Significance	105	- 105
Total DTRA - Defense Threat Reduction Agency:			105	-	105
EDUC - Department of Education:					
EDUC	10005219	91990021C0002	Consensus Panel on Opportunities for NAEP in an Age of AI and Pervasive Computation: A Pragmatic Vision for 2030 and Beyond	1,266	- 1,266
Total EDUC - Department of Education:			1,266	-	1,266

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
EPA - Environmental Protection Agency:					
EPA	10004778	68HERC19D0011/68HERC20F0025	\$ 306	\$ -	\$ 306
EPA	10004806	68HERC19D0011/68HERC20F0055	58	-	58
EPA	10004842	68HERC19D0011/68HERC20F0083	80	-	80
EPA	10004936	68HERC19D0011/68HERC20F0171			
		Technical Expertise Support on Environmental Protection Agency (EPA) Scientific Issues			
		Strategy for Review of the Toxic Substances Control Act Systematic Review Guidance Document			
		Transportation Research Board Core Technical Activities			
		Provision of Scientific and Technical Expertise for Environmental Public Health Issue Workshops/ Business Meetings	138	-	138
EPA	10005058	68HERC19D0011/68HERC20F0328	288	-	288
EPA	10005079	68HERC19D0011/68HERC20F0314			
		Environmental Impacts of Currently Marketed Sunscreens			
		Anticipatory Research for EPA's Research and Development Enterprise to Inform Future Environmental Protection: The Road Ahead	433	-	433
EPA	10005080	68HERC19D0011/68HERC20F0315			
EPA	10005081	68HERC19D0011/68HERC20F0334			
EPA	10005122	68HERC19D0011/68HERC20F0395			
EPA	10005206	68HERC19D0011/68HERC21F0010			
EPA	10005334	68HE0B21P0186			
EPA	10005358	68HERC19D0011/68HERC21F0115			
		Workshop on Federal Government Human Health PFAS Research	54	-	54
		Health Risks of Indoor Exposures to PM2.5 and Practical Mitigation Approaches: A Workshop	216	-	216
		Emerging Science on Indoor Chemistry	93	-	93
		Assessing Causality from a Multidisciplinary Evidence Base for National Ambient Air Quality Standards	316	-	316
		MPS for Efficacy and Safety Studies: A Workshop	9	-	9
		Respiratory Protection for the Public and Workers without Respiratory Protection Programs at their Workplaces	26	-	26
EPA	10005365	68HERC19D0011/68HERC21F0178	216	-	216
EPA	10005388	68HERC19D0011/68HERC21F0203			
		Variability & Relevance of Mammalian Toxicity			
		Consensus Report on the Health Risks of Indoor Exposures to Fine Particulate Matter and Practical Mitigation Solutions	60	-	60
EPA	10005446	68HERC19D0011/68HERC21F0257			
EPA	10005571	68HERC19D0011/68HERC21F0401			
EPA	10005666	68HERC19D0011/68HERC22F0077			
		Consensus Report on Electric Arc Furnace Slag	70	-	70
		Review of EPA's Draft Assessment Product - 2021	29	-	29
		Partial Support for the Role of Companion Animals as Sentinels for Predicting Environmental Exposure Effects on Aging and Cancer Susceptibility in Humans: A Workshop	18	-	18
		Total EPA - Environmental Protection Agency:	2,410	-	2,410
FDA - U.S. Food and Drug Administration:					
FDA	10002489	1R13FD005362-01			
FDA	10004343	1R13FD006614-01			
FDA	10004526	75F40119C10045			
FDA	10004634	1R13FD006967			
FDA	10004738	1R13FD006897-01			
FDA	10004868	75F40120P00067			
FDA	10004956	75F40120C00032			
		Forum on Neuroscience and Nervous System Disorders	6	-	6
		Forum on Regenerative Medicine	20	-	20
		Identifying Innovative Technologies to Advance Pharmaceutical Manufacturing	290	-	290
		ILAR Roundtable on Science and Welfare in Laboratory Animal Use	24	-	24
		Forum on Microbial Threats	37	-	37
		Forum on Medical and Public Health Preparedness for Disasters and Emergencies	173	-	173
		Improving the Evidence Base for Treating Older Adults with Cancer: Exploring Root Causes and Bridging the Knowledge Gap	132	-	132
FDA	10005077	75F40120P00440			
FDA	10005084	75F40120P00328			
		Scanning for New Evidence on Riboflavin to Support a Dietary Reference Intake Review	52	-	52
		The National Academies Animal Nutrition Program Provision of Core Services for the Food and Drug Administration			
FDA	10005199	75F40120C00192			
FDA	10005246	1R13FD007302-01			
FDA	10005484	75F40121C00075			
		Food Forum	25	-	25
		Forum on Drug Discovery, Development, and Translation	51	-	51
		Review of Dietary Reference Intakes for Energy	35	-	35
		Total FDA - U.S. Food and Drug Administration:	884	-	884
GAO - U.S. Government Accountability Office:					
GAO	10005033	05GAOA20P0013			
GAO	10005176	05GAOA18D0001/05GAOA20K0125 TO# 2020-06			
GAO	10005218	05GAOA18D0001/05GAOA20K0134, TO# 2020-09			
GAO	10005221	05GAOA18D0001/05GAOA20K0131, TO# 2020-08			
GAO	10005367	05GAOA18D0001/05GAOA21K0015, TO# 2021-01			
GAO	10005409	05GAOA18D0001/05GAOA21K0058, TO# 2021-02			
		NAM-GAO Initiative: AI in the Delivery of Health Care	12	-	12
		Experts for GAO Federal COVID Response Oversight Responsibilities	4	-	4
		Expert Meeting on Current and Emerging Quantum Technologies	16	-	16
		Experts on GAO Vaccine Development Consultation	33	-	33
		Expert Assistance	11	-	11
		Evaluate Current and Emerging Blockchain Technologies	40	-	40

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
GAO - U.S. Government Accountability Office (Continued):						
GAO	10005410	05GA0A18D0001/05GA0A21K0059, TO# 2021-03	Evaluating Artificial Intelligence/Machine Learning Technologies in Use and in Development for Medical Diagnostics: An Expert Meeting	\$ 41	\$ -	\$ 41
GAO	10005431	05GA0A18D0001/05GA0A21K0075, TO# 2021-04	Review of Internet Architecture Security, GAO	8	-	8
GAO	10005450	05GA0A21P0009	NAS/NAM GAO Initiative: AI in Medical Diagnostics	26	-	26
GAO	10005523	05GA0A18D0001/05GA0A21K0114, TO# 2021-05	Meeting of Experts to Evaluate Environmental Effects Related to Large Constellations of Satellites	16	-	16
GAO	10005671	05GA0A21D0008/05GA0A22K0018	Assessment of the Use of Carbon Management Technologies	8	-	8
GAO	10005672	05GA0A21D0008/05GA0A22K0006	Coordination Scientific and Technical Advice/Oversight	2	-	2
Total GAO - U.S. Government Accountability Office:				<u>217</u>	<u>-</u>	<u>217</u>
GSA - General Services Administration:						
GSA	10004739	47PA0119P0024	Federal Facilities Council	60	-	60
Total GSA - General Services Administration:				<u>60</u>	<u>-</u>	<u>60</u>
HUD - Housing and Urban Development:						
HUD	10003367	DU208WR-16-C-02	HUD Partial Support for the Core Activities of the Committee on National Statistics	49	-	49
Total HUD - Housing and Urban Development:				<u>49</u>	<u>-</u>	<u>49</u>
INTR - Department of the Interior:						
INTR	10003554	E17PC00010	Bureau of Safety and Environmental Enforcement Inspection Alternatives Study	46	-	46
INTR	10004238	G18AP00074	Mapping Science Committee and its Activities	75	-	75
INTR	10004273	140D0418P0097	Federal Facilities Council	50	-	50
INTR	10004287	140L0618C0052	Native Seed Assessment	225	27	252
INTR	10004312	140D0418P0112	Transportation Research Board Membership	67	-	67
INTR	10004485	140E0119P0010	Marine Board of the National Academies - General Program Support	36	-	36
INTR	10004510	G19AC00122	Committee on Seismology and Geodynamics and its Activities	11	-	11
INTR	10004676	140F0419P0280	Assistance to the U.S. Fish and Wildlife Service on Taxonomic Studies of the Red Wolf: A Review of Applications to Carry Out Research and Development of a Research Strategy	78	-	78
INTR	10004745	140M0119D0001/140M0119F0050	Fisheries Research and Monitoring for Atlantic Offshore Development: A Workshop Dissemination: Special Issue of Oceanography	34	-	34
INTR	10004961	140M0119D0001/140M0120F0015	Study on Oil in the Sea, IV; Inputs, Fates and Effects	138	-	138
INTR	10005184	140M0119D0001/140M0120F0041	Study on First in Class: Assessment and Advancement of Science in the Bureau of Ocean Energy Management's Environmental Studies Program	122	-	122
INTR	10005200	140M0119D0001/140M0121F0004	Maintain the Standing Committee for Advisory Services of a Scientific Nature	11	-	11
INTR	10005208	140E0121C0002	Peer Review of Wellhead Oil-Burning Efficiency	178	-	178
INTR	10005254	140M0119D0001/140M0121F0013	Wind Turbine Generator Impacts to Marine Vessel Radar	110	-	110
INTR	10005322	140D0421P0229	DEPS BICE FFC Membership Dues 2021	50	-	50
INTR	10005386	140M0119D0001/140M0121F0017	Maintain (COSA) Standing Committee	35	-	35
INTR	10005394	G21AC10302	Mapping Science Committee and Its Activities	8	-	8
INTR	10005417	G21AP10301-00	USGS Support of Ocean Studies Board	4	-	4
INTR	10005435	G21AC10353-00	Resilient America Roundtable	6	-	6
INTR	10005439	140M0119D0001/140M0121F0024	Maintain the Established Standing Committee for Advisory Services of a Scientific Nature	40	-	40
INTR	10005448	G21AP10440	Board on Earth Sciences and Resources and its Activities	25	-	25
INTR	10005615	140D0421P0228	Sponsorship of the Transportation Research Board (TRB) Core Programs	13	-	13
INTR	10005624	140M0119D0001/140M0121F0056	Maintain the Standing Committee for Advisory Services of the Scientific Nature: Committee on Environmental Science and Assessment for Ocean Energy Management (COSA)	26	-	26
Total INTR - Department of the Interior:				<u>1,388</u>	<u>27</u>	<u>1,415</u>
NASA - National Aeronautics and Space Administration:						
NASA	10002633	NNX17AB01G	Ocean Studies Board Support	145	-	145
NASA	10003236	NNH16CE01B/NNH17CE00D	Committee on Biological and Physical Sciences in Space	164	-	164

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
NASA - National Aeronautics and Space Administration (Continued):					
NASA	10003249	NNH16CE01B /NNH17CE02D	\$ 57	\$ -	\$ 57
NASA	10003305	NNH16CE01B/NNH16CE03D	307	-	307
NASA	10003316	NNH17CB02B/NNH17CB00T	1,058	-	1,058
NASA	10003318	NNH17CB02B/NNH17CB01T			
		Ongoing Support of the Space Studies Board and COSPAR			
		Ongoing Support of the Space Studies Board's Committee on Space and Earth Studies and its Discipline Committees	666	-	666
NASA	10003670	80NSSC18K0861	158	-	158
NASA	10004210	80HQTR19D0001/80HQTR19F0025	527	-	527
NASA	10004306	NNH17CB02B/80HQTR19F0013	248	-	248
NASA	10004351	NNH17CB02B/80HQTR19F0043			
NASA	10004423	NNH16CE01B/80HQTR18F0342	10	-	10
NASA	10004461	80HQTR19F0101	49	-	49
NASA	10004555	80NSSC19K1319	31	-	31
		Developing a Research Agenda and Research Governance Approaches for Climate Intervention			
		Strategies that Reflect Sunlight to Cool Earth	11	-	11
NASA	10004587	80NSSC19K1616	218	-	218
NASA	10004816	80NSSC20P0537	11	-	11
NASA	10004838	NNH17CB02B/80HQTR20F0075	223	-	223
NASA	10004858	NNH16CE01B/80HQTR20F0059	108	-	108
NASA	10004902	NNH17CB02B/80HQTR20F0084	1,038	890	1,928
NASA	10004974	NNH16CE01B/80HQTR20F0216	132	-	132
NASA	10005024	NNH16CE01B/80HQTR20F0147	38	-	38
NASA	10005029	80NSSC20K1479	64	-	64
NASA	10005037	80NSSC20K1243	8	-	8
NASA	10005044	NNH17CB02B/80HQTR20F0176	459	72	531
NASA	10005129	NNH17CB02B/80HQTR20F0203	155	-	155
NASA	10005174	80HQTR19D0021/80HQTR20F0206			
		Committee on Assessment of Opinions for Managing Cancer Risks Associated with Radiation			
		Exposure following Crewed Space Missions	531	-	531
NASA	10005187	80NSSC21P0317	35	-	35
NASA	10005247	NNH16CE01B/80HQTR21F0018	90	-	90
NASA	10005251	NNH17CB02B/80HQTR21F0037	488	-	488
NASA	10005272	NNH16CE01B/80HQTR21F0040	106	-	106
NASA	10005287	NNH17CB02B/80HQTR21F0056	183	-	183
NASA	10005316	80NSSC21P1543	18	-	18
NASA	10005351	NNH17CB02B/80HQTR21F0147	57	-	57
NASA	10005376	NNH16CE01B/80HQTR21F0088			
		Research Partnership Options for NASA's High-Rate Composite Aircraft Manufacturing Project:			
		Meeting of Experts	19	-	19
NASA	10005389	NNH17CB02B/80HQTR21F0122	56	-	56
NASA	10005392	80NSSC21P1281	5	-	5
NASA	10005426	NNH16CE01B/80HQTR21F0182			
		Increase the Use of the International Space Station U.S. National Laboratory as a Research Platform:			
		Meeting of Experts	7	-	7
NASA	10005514	NNH16CE01B/80HQTR21F0202	146	-	146
		Aeronautics & Space Engineering Board			
		Total NASA - National Aeronautics and Space Administration:	7,626	962	8,588
NAVY - Department of Navy:					
NAVY	10003075	N00014-17-D-4001/N00014-17-F-1003			
		Government-University-Industry Research Roundtable (GUIRR) Core Activities and Federal Demonstration Partnership	180	21	201
NAVY	10004062	N00014-17-D-4001/N00014-18-F-7006	65	-	65
NAVY	10005046	N00189-16-G-Z001/N0018920F0612	607	-	607
		Marine Board of the National Academies - General Program Support - ONR			
		Naval Studies Board Support 2020-2021			

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
NAVY - Department of Navy (Continued):						
NAVY	10005092	N00014-17-D-4001/N00014-21-F-7001	Assessment of Partnership Options for Satellite Systems for Collecting Scientific Quality Oceanic and Coastal Data	\$ 349	\$ -	\$ 349
			Total NAVY - Department of Navy:	1,201	21	1,222
NEH - National Endowment for the Humanities:						
NEH	10004390	AH-266283-19	Dissemination: Integration of Education in the Sciences, Engineering and Medicine with the Arts and Humanities at the Undergraduate and Graduate Levels	101	-	101
			Total NEH - National Endowment for the Humanities:	101	-	101
NSF - National Science Foundation:						
NSF	10002825	SES-1560294	Partial Support for the Core Activities of the Committee on National Statistics	1,655	135	1,790
NSF	10003398	DMR-1708170	U.S. Engagement in IAU, IUPAC, IUCr, IMU, ICO, and IUPAP	56	-	56
NSF	10003490	EFMA-1728813	Core Support for the Water Science and Technology Board	90	-	90
NSF	10003495	1729167	Leadership Support for Core Activities of the Board on Behavioral, Cognitive and Sensory Sciences	214	-	214
NSF	10003601	EFMA-1742900	Advancing and Representing Research across the Spectrum of Mechanics Nationally and Internationally: The U.S. National Committee on Theoretical and Applied Mechanics	160	-	160
NSF	10003637	1743856	Reproducibility and Replicability in Science	65	-	65
NSF	10003638	1744000	Leadership Support for the Board on Environmental Change and Society	110	-	110
NSF	10003816	OIA-1762395	Promising Practices for Addressing the Underrepresentation of Women in STEM: A Comparative Analysis Across Scientific Disciplines	94	-	94
NSF	10003822	1760032	Decadal Assessment and Outlook Report on Biological Physics/Physics of Living Systems	109	-	109
NSF	10003879	OPP-1807597	Polar Research Board in Support of NSF	139	-	139
NSF	10003902	DRL-1819034	Further Strengthening Approaches that Bring Mathematics Education Policy and Practice Together: The U.S. National Commission on Mathematics Instruction	43	-	43
NSF	10003913	DMS-1820527	Partial Support of the Board on Mathematical Sciences and Analytics and the Committee on Applied and Theoretical Statistics	115	-	115
NSF	10003943	1822391	NCSES Panel on Transparency and Reproducibility for NCSES Statistics and Workshop on the Implications of Convergence for Measuring the Science and Engineering (S&E) Workforce and the S&E Enterprise	174	-	174
NSF	10003945	EAR-1823050	Catalyzing Opportunities for Research in the Earth Sciences (CORES): A Decadal Survey for NSF's Division of Earth Sciences	20	-	20
NSF	10003950	AST-1824437	Committee on Astronomy and Astrophysics	42	-	42
NSF	10003955	AGS-1827264	Board on Atmospheric Sciences Climate in Support of NSF's Missions	220	-	220
NSF	10004031	CHE-1834303	Board on Chemical Sciences and Technology and Chemical Sciences Roundtable	218	-	218
NSF	10004065	OIA-1838548	FDP Core Activities 2018-2021	85	32	117
NSF	10004081	DBI-1839674	Forum on Neuroscience and Nervous Systems Disorders	1	-	1
NSF	10004082	EEC-1840746	Sharing Exemplary Admissions Practices that Promote Diversity in Engineering	134	-	134
NSF	10004250	AST-1852611	The Decadal Survey in Astronomy and Astrophysics 2020 (ASTRO 2020)	3	-	3
NSF	10004278	BCS-1853713	Geographical Sciences Committee and its Activities	101	-	101
NSF	10004393	CBET-1926880	Chemical Engineering in the 21st Century: Challenges and Opportunities	130	-	130
NSF	10004407	CMMI-1916526	Corrosion of Buried Steel at New and In-Service Infrastructure	73	-	73
NSF	10004421	OISE-1917284	Advancing U.S. Science, Leadership, and Global Engagement in International Science Networks	1,047	-	1,047
NSF	10004455	NCSE-1923018	R&D, Global Value Chains and Globalization Measurement: A Workshop	138	-	138
NSF	10004458	CNS-1923245	Promising Practices for Improving the Recruitment, Retention and Advancement of Women of Color in Tech	157	-	157
NSF	10004473	IOS-1927620	Functional Genomics	25	-	25
NSF	10004511	1933193	Leadership Support for Activities of the Board on Science Education	291	-	291
NSF	10004525	OCE-1933374	Ocean Studies Board Activities in Support of NSF's Mission	199	-	199

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
NSF - National Science Foundation (Continued):					
NSF	10004528	DMS-1933194	\$ 65	\$ -	\$ 65
NSF	10004538	CNS-1933974	373	-	373
NSF	10004549	EAR-1933986	150	-	150
NSF	10004568	1935569			
NSF	10004597	DBI-1937338	168	-	168
NSF	10004599	CNS-1937181	158	-	158
NSF	10004600	1937864			
NSF	10004603	OISE-1938854	343	-	343
NSF	10004630	1940543	8	-	8
NSF	10004640	1940656			
NSF	10004648	OISE-1941850	4	-	4
NSF	10004729	49100419C0006	26	-	26
NSF	10004769	DEB-1953591	27	-	27
NSF	10004791	EFMA-2003333	30	-	30
NSF	10004817	2011625			
NSF	10004821	2011811	66	-	66
NSF	10004852	DUE- 2015899	33	-	33
NSF	10004871	CHE-2016227	72	-	72
NSF	10004905	OPP-2022678	100	-	100
NSF	10004917	2022844	58	-	58
NSF	10004933	AST-2126063	256	-	256
NSF	10004938	OPP-2024018	156	145	301
NSF	10004962	2030149			
NSF	10004972	2049851	267	-	267
NSF	10004978	2028849	634	-	634
NSF	10004991	DUE-2029539			
NSF	10004999	SMA-2034518	15	-	15
NSF	10005042	AGS-2035238	88	-	88
NSF	10005113	2041530	16	-	16
NSF	10005126	2042775	63	-	63
NSF	10005160	SES-2050058	113	-	113
NSF	10005188	OIA-2050485	4	-	4
NSF	10005220	2054501			
NSF	10005220	2054501	3	-	3
NSF	10005220	2054501	185	-	185
NSF	10005220	2054501	31	-	31
NSF	10005220	2054501	49	-	49
NSF	10005220	2054501	724	-	724
NSF	10005220	2054501	68	-	68
NSF	10005220	2054501	149	-	149

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier	Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
NSF - National Science Foundation (Continued):				
NSF 10005237 EFMA-2101770	2021 USFOE & GAFOE	\$ 110	\$ -	\$ 110
NSF 10005244 EFMA-2101725	Extraordinary Engineering Impacts: Seven Decades of Support from National Science Foundation	243	-	243
NSF 10005252 CHE-2106513	BCST and CSR Core Support	46	-	46
NSF 10005292 2114138	Core Support for Committee on Science, Engineering, Medicine and Public Policy	2	-	2
NSF 10005297 SES-2114583	Developing a Vision for a 21st Century National Data Infrastructure for Federal Statistics and Social and Economic Research	80	-	80
NSF 10005332 CHE-2117300	Chemistry and Quantum Information Science	38	-	38
NSF 10005403 ICER-2129515	RAPID: Leading Practices for Improving Accessibility and Inclusion in Field and Laboratory Science	69	-	69
NSF 10005424 OPP- 2132040	Technology/Developments to Advance Antarctic Research	46	-	46
NSF 10005447 CMMI-2135084	Analysis of Causes of Failure and Collapse of the 305-Meter Telescope at the Arecibo in Puerto Rico	34	-	34
NSF 10005480 2139091	Science for Judges - Development of the Reference Manual on Scientific Evidence, 4th Edition	3	-	3
NSF 10005504 2141337	Monitoring, Mitigating and Leveraging the Long-term Impact of COVID-19 on the Future Careers of Women in STEM: A Workshop	7	-	7
NSF 10005521 SES-2145655	Facilitating Rapid Responses to SBE-Related Questions: the Societal Experts Action Network (SEAN)	12	-	12
NSF 6593 CBET-1041302	Core Support for the Water Science and Technology Board	1	-	1
	Total NSF - National Science Foundation:	11,101	312	11,413
ODNI - Office of the Director of National Intelligence:				
ODNI 10003722 2014-14041100003-013	Acquisition Strategies for Future Space-base Optics-Consensus Study	135	-	135
ODNI 10004810 2020-20011300401-001	ONDI/DS&T Indefinite Delivery Indefinite Quantity Deep Expertise Support - Task Order 1 - Persistent Engagement	1,404	-	1,404
ODNI 10005021 2020-20011300401-002	Future of Encryption and Decryption for the Intelligence Community	226	-	226
ODNI 10005023 2020-20011300401-003	Leveraging the Future Research Environment for the Intelligence Community	590	-	590
ODNI 10005158 2020-20072900001	An Analytic Framework: Issues in the Measurement and Analysis of Public Opinion	478	-	478
ODNI 10005418 2020-20011300401-005	Biotechnology Capabilities and Intelligence Needs	213	-	213
ODNI 10005423 2020-20011300401-004	National Academies Climate Security Roundtable	183	-	183
ODNI 10005532 2020-20011300401-006	Forum on the Revolution in Intelligence Affairs	22	-	22
	Total ODNI - Office of the Director of National Intelligence:	3,251	-	3,251
SSA - Social Security Administration:				
SSA 10004331 28321318FDS030355	Standing Committee of Medical, Vocational, and other Experts	480	-	480
SSA 10004559 28321318D00060015/28321319FDS030195	Childhood Cancers and Disability	164	-	164
SSA 10004586 28321319FDS030230	Selected Adult Cancers and Disability	319	-	319
SSA 10004615 28321319FDS030242	The Use of Biomarkers to Establish Presence and Severity of Impairments: A Workshop	5	-	5
SSA 10005005 28321318D00060015/28321320FDS030151	Evaluating Hearing Loss for Individuals with Cochlear Implants	407	-	407
SSA 10005041 28321318D00060015/28321320FDS030166	Organ Transplantation and Disability: A Workshop	224	-	224
SSA 10005066 28321318D00060015/28321320FDS030182	Select Immune System Disorders and Disability	721	-	721
SSA 10005087 28321318D00060015/28321320FDS030190	Selected Connective Tissue Disorders and Disability	570	-	570
SSA 10005090 28321318D00060015/28321320FDS030196	Synthesizing Information about Vocational Preparation Requirements, Occupational Tasks, and Required Functional Abilities in the Standard Occupational Classification (SOC) System	2	-	2
SSA 10005375 28321318D00060015/28321321FDS030108	Stem Cell Treatment and Disability: A Workshop	111	-	111
SSA 10005433 28321318D00060015/28321321FDS030143	Identifying New or Improved Diagnostic or Evaluative Techniques	136	-	136
SSA 10005468 28321318D00060015/28321321FDS030193	Long-Term Health Effects Stemming from COVID-19	65	-	65
SSA 10005519 28321318D00060015/28321321FDS030243	Telehealth Assessment in Medicine and Allied Health: A Workshop	57	-	57
	Total SSA - Social Security Administration:	3,261	-	3,261
STAT - Department of State:				
STAT 10003161 SAQMMA16C0136	Standing Committee on Air Pollution Management Overseas	180	-	180
STAT 10003510 SISNCT17CA0026	Second Round of the One-Health Research Fellowships Program in Pakistan	174	34	208

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
STAT - Department of State (Continued):						
STAT	10003513	SISNCT17CA0037	A Joint Pakistan-U.S. Workshop on Implementation of Best Practices Guide for Public-and Animal-Health Clinical Laboratories in Pakistan	\$ 196	\$ -	\$ 196
STAT	10003952	SISNCT19CA0001	Institutionalizing Biosecurity within the Indian Advanced Emerging Biotechnology Sector	130	-	130
STAT	10005116	SINLEC20CA3213	Evidence to Advance Reform in the Global Security and Justice Sectors: A Workshop-based Consensus Study Series	609	-	609
STAT	10005216	19AQMM20C0211	Commercial Aviation Supply Chain Resilience: Meeting of Experts	3	-	3
STAT	10005540	19AQMM21C0157	Countering High Consequence Pathogens Originating from Wet Markets	47	-	47
Total STAT - Department of State:				<u>1,339</u>	<u>34</u>	<u>1,373</u>
TRSY - Department of Treasury:						
TRSY	10005145	UNNUMBERED	CNSTAT Core Support Funding	20	-	20
Total TRSY - Department of Treasury:				<u>20</u>	<u>-</u>	<u>20</u>
USDA - U.S. Department of Agriculture:						
USDA	10003804	NR183A750025C014	Exploring a Dynamic Soil Information System: A Workshop	50	-	50
USDA	10004097	1232SB18P0128	Federal Facilities Council	30	-	30
USDA	10004164	59-8040-8-003	Food Forum	11	-	11
USDA	10004203	2019-67019-29362	Exploring a Dynamic Soil Information System: A Workshop	49	-	49
USDA	10004680	59-0204-9-207	Scanning for New Evidence on the Nutrient Content of Human Milk: A Model for the Derivation of Age-Specific Nutrient Requirements	4	-	4
USDA	10004819	123A9420P0008	Food Forum	6	-	6
USDA	10005034	59-0204-0-003	Standing Committee on Evidence Synthesis, and Communications in Diet and Chronic Disease Relationships	83	-	83
USDA	10005056	AP20AC000000G005	Micro-Physiological Systems for Efficacy and Safety Studies: A Workshop on Advances in Organs-On-Chip Technologies for Animals	10	-	10
USDA	10005067	AP20AC000000G006	Rapid and Sustained Response by the Laboratory Animal Research Community During An Infectious Disease Pandemic: A Workshop on Lessons Being Learned From COVID-19	10	-	10
USDA	10005078	59-0204-0-001	Scanning for New Evidence on Riboflavin to Support a Dietary Reference Intake Review	22	-	22
USDA	10005135	12318720P0089	TRB Membership	7	-	7
USDA	10005226	AP20AC000000G001	Scientific and Veterinary Medical Literature on Hoof and Pastern Pain	60	-	60
USDA	10005233	58-3AEU-0-0073	CNSTAT Core Support	118	-	118
USDA	10005289	2021-38831-34202	Government-University-Industry Research Roundtable Core Activities and the Federal Demonstration Partnership	1	19	20
USDA	10005336	123A9421P0017	Food Forum	40	-	40
USDA	10005430	12319821C0003	Study on the Dietary Guidelines for Americans, 2020-2025	407	-	407
USDA	10005490	59-0204-1-005	Review of Dietary Reference Intakes for Energy	14	-	14
USDA	10005507	100-0100-001-00135	Blue Ribbon Panel: Enhancing Land Grant Coordination	82	-	82
USDA	10005558	59-0204-1-006	Standing Committee on Review of the Dietary Reference Intake Framework	24	-	24
Total USDA - U.S. Department of Agriculture:				<u>1,028</u>	<u>19</u>	<u>1,047</u>
USUHS - Uniformed Services University of the Health Sciences:						
USUHS	10005329	HU00012110002	Forum on Microbial Threats	40	-	40
Total USUHS - Uniformed Services University of the Health Sciences:				<u>40</u>	<u>-</u>	<u>40</u>
VA - Department of Veterans Affairs:						
VA	10003081	VA268-16-C-0051	Forum on Regenerative Medicine	22	-	22
VA	10003539	VA119A-17-C-0085	Continuing Support of the Federal Facilities Council	18	-	18
VA	10004099	36E77618C0020	Healthcare Engineering Budget and Staffing Requirements for Veterans Health Administration Medical Facilities	143	-	143
VA	10004607	101D93004	Decadal Survey on Alzheimer's Disease (AD) and Alzheimer's Disease Related Dementia (ADRD)	88	-	88

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier		Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
VA - Department of Veterans Affairs (Continued):					
VA	10004612	36C24E20C0009	\$ 36	\$ -	\$ 36
VA	10004625	36C24E20C0008	65	-	65
VA	10004826	36C24E20C0006 (508D07002)			
		Forum on Neuroscience and Nervous System Disorders			
		Roundtable on Value & Science-Driven Health Care			
		Review of Department of Veterans Affairs Study on Potential Effects of Service and Emotional Support Dogs on Veterans with Post-Traumatic Stress Disorder	375	-	375
VA	10004976	36C24520C0186	816	100	916
VA	10004984	36C24520C0105			
		Reassessment of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry Global Forum on Innovation in Health Professional Education with Attendance at Forums and Annual Workshops	30	-	30
VA	10004994	36C24E20C0015			
		U.S. Department of Veterans Affairs Participation in Activities of the National Academies of Sciences Institute for Laboratory Animal Research	45	-	45
VA	10005198	36C24E20C0024 (36C24E20R0038)	464	-	464
VA	10005207	36C24518D0171/36C24520N0497	25	-	25
VA	10005209	36C25020P1830	75	-	75
VA	10005228	36C24518D0171/36C24520N0522	50	-	50
VA	10005370	36C24E21C0011	10	-	10
VA	10005440	36C24518D0171/36C24521N0403			
		Transforming Health Care to Create Whole Health: Strategies to Assess, Scale, and Spread the Whole Person Approach to Health	183	-	183
		Total VA - Department of Veterans Affairs:	2,445	100	2,545
WH - The White House:					
WH	10005479	UNNUMBERED			
WH	10005500	11316021P0001OND			
		IPA - Anne-Marie Mazza	94	-	94
		Workshop on Methadone Treatment for Opioid Use Disorder and the Examination of Federal Laws and Regulations	72	-	72
		WH - The White House:	166	-	166
		Total Advisory and Research Activities:	118,766	45,256	164,022
Function: Fellowship and Other Support of Scholars:					
AID - U.S. Agency For International Development:					
AID	10002672	AID-OAA-A-15-00072			
		Jefferson Science Fellows	189	-	189
		Total AID - U.S. Agency For International Development:	189	-	189
AIRF - Department of the Air Force:					
AIRF	10005137	FA9550-18-D-0002/FA9550-20-F-0006			
AIRF	10005536	FA9550-18-D-0002/FA9550-21-F-0001			
		AFRL Resident Research Associateship Program	3,839	-	3,839
		AFRL Resident Research Associateship Program	3,112	-	3,112
		Total AIRF - Department of the Air Force:	6,951	-	6,951
ARMY - Department of the Army:					
ARMY	10003501	W81XWH-17-2-0034			
ARMY	10003837	W81XWH-17-2-0039			
ARMY	10003853	W81XWH-17-2-0031			
ARMY	10003854	W81XWH-17-2-0033			
ARMY	10004406	W911NF-19-2-0142			
ARMY	10004508	W911NF-19-2-0186			
ARMY	10004975	W911NF-18-D-0002/W911NF20F0016			
		AMRMC Resident Research Associateship Program	155	-	155
		Associate Support for WRAIR	875	-	875
		Associate Support for USAMRIID	104	-	104
		Associate Support for USAISR	136	-	136
		Army Research Office Resident Research Associateship Program	830	-	830
		Army Research Laboratory Resident Research Associateships Program	424	-	424
		National Study on Defense Research At Historically Black Colleges and Universities and Other Minority Institutions	743	-	743
		Total ARMY - Department of the Army:	3,267	-	3,267
CMRC - Department of Commerce:					
CMRC	10002658	EA-133F-15-CN-0097			
CMRC	10003642	SB1341-17-CN-0019			
CMRC	10005355	1305M321CNRMA0002			
		National Oceanic and Atmospheric Administration Resident Research Associateship Program	450	-	450
		National Institutes of Standards and Technology Resident Research Associateship Program	231	-	231
		NOAA Resident Research Associateship Program	2,285	-	2,285
		Total CMRC - Department of Commerce:	2,966	-	2,966

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
DOE - Department Of Energy:						
DOE	10004186	DE-FE0031572	NETL Resident Research Associateship and Summer Faculty Fellowship Program	\$ 116	\$ 3	\$ 119
			Total DOE - Department Of Energy:	<u>116</u>	<u>3</u>	<u>119</u>
DOT - Department of Transportation:						
DOT	10003883	DTFH6117D00020/693JJ318F000004	National Research Council (NRC) Research Associateship Program at the Turner-Fairbank Highway Research Center (TFHRC)	65	-	65
DOT	10003996	DTFH6117D00020L/693JJ318F000035	Development and Seismic Evaluation of Pier Systems with Pocket Connections, CFRP Tendons, and ECC/UHPC Columns	26	-	26
DOT	10004178	DTFH6117D00020/693JJ318F000218	Developing Probabilistic Bridge Deterioration Models Based on Non-Destructive Evaluation of Concrete Bridge Decks Using Multiple NDE Technologies	45	-	45
DOT	10004399	DTFH6117D00020/693JJ319F000028	AI-Aided Bridge Condition Assessment System Using Deep Learning Approaches	75	-	75
DOT	10004417	DTFH6117D00020/693JJ319F000035	Integrating Life Cycle Thinking into the Current Pavement Practices	42	-	42
DOT	10004608	DTFH6117D00020L/693JJ319F000145	Integrating of Machine Learning into Long Pavement Performance Prediction Models	55	-	55
DOT	10004945	DTFH6117D00020L/693JJ320F000082	Evaluation of Behavioral, Traffic and Geometric Risk Factors of Crashes Using Naturalistic Driving Study Data	47	-	47
DOT	10005397	DTFH6117D00020L/693JJ321F000079	Design of Pretensioned Ultra-High Performance Concrete (UHPC) Girders and Piles	28	-	28
DOT	10005482	DTFH6117D00020L/693JJ321F000081	Big Data Investigations to Knowledge for Enhanced Pavement Management	53	-	53
			Total DOT - Department of Transportation:	<u>436</u>	<u>-</u>	<u>436</u>
DTRA - Defense Threat Reduction Agency:						
DTRA	10003577	HDTRA11720002	NRC Research Associateship Program in Chemical and Biological Defense	458	88	546
			Total DTRA - Defense Threat Reduction Agency:	<u>458</u>	<u>88</u>	<u>546</u>
EPA - Environmental Protection Agency:						
EPA	10004295	CR-83948401	EPA Resident Research Associateship and Summer Faculty Fellowship Program	462	-	462
			Total EPA - Environmental Protection Agency:	<u>462</u>	<u>-</u>	<u>462</u>
NAVY - Department of Navy:						
NAVY	10003302	N00173-17-2-C002	Navy/Naval Research Laboratory Resident Research Associateship Program	5,329	-	5,329
NAVY	10003362	N00244-17-C-0003	NPS Resident Research Associateship Program	766	-	766
NAVY	10004499	N68936-19-2-0001	Naval Air Warfare Center Weapons Division Resident Research Associateships Program	346	-	346
NAVY	10005284	N00173-21-2-C004	Naval Research Laboratories Research Associateship Program	3	-	3
NAVY	10005284	N00173-21-2-C004	Naval Research Laboratories Research Associateship Program	5,137	-	5,137
NAVY	10005684	N0024422C0002	NRC Research Associateship Program (RAP) for the Naval Postgraduate School (NPS)	62	-	62
			Total NAVY - Department of Navy:	<u>11,643</u>	<u>-</u>	<u>11,643</u>
NSA - National Security Agency:						
NSA	10005232	H98230-20-D-0049, DO #1	National Security Agency Research Associateship Program	87	-	87
			Total NSA - National Security Agency:	<u>87</u>	<u>-</u>	<u>87</u>
NSF - National Science Foundation:						
NSF	10005455	CMMI-2135969	NSF and USNS/TAM Early Career Fellowship Program for ICT	27	-	27
NSF	10003355	OISE-1663864	Enhancing U.S. Membership in the International Institute for Applied Systems Analysis (IIASA)	150	-	150
			Total NSF - National Science Foundation:	<u>177</u>	<u>-</u>	<u>177</u>
STAT - Department of State:						
STAT	10005161	19AQMM20P1430	Jefferson Science Fellows at the US Department of State	503	-	503
STAT	10005634	19AQMM21D0113/19AQMM21F3821	Jefferson Science Fellows at the US Department of State	47	-	47
STAT	10005635	19AQMM21D0113/19AQMM21F3817	Jefferson Science Fellows at the US Department of State	42	-	42
STAT	10005636	19AQMM21D0113/19AQMM21F3828	Jefferson Science Fellows at the US Department of State	12	-	12
STAT	10005637	19AQMM21D0113/19AQMM21F3826	Jefferson Science Fellows at the US Department of State	4	-	4
STAT	10005645	19AQMM21D0113/19AQMM21F3962	Jefferson Science Fellows at the US Department of State	12	-	12
STAT	10005674	19AQMM21D0113/19AQMM22F0017	Jefferson Science Fellows at the US Department of State	4	-	4
			Total STAT - Department of State:	<u>624</u>	<u>-</u>	<u>624</u>

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier	Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
USUHS - Uniformed Services University of the Health Sciences:				
USUHS 10004944 HU00012020020	Armed Forces Radiobiology Research Institute (AFRRI)/NRC Research Associateship Program (RAP)	\$ 26	\$ -	\$ 26
USUHS 10005327 HU00012110001	Armed Forces Radiobiology Research Institute (AFRRI)/NRC Research Associateship Program (RAP)	97	-	97
USUHS 10005407 HU00012110003	Armed Forces Radiobiology Research Institute (AFRRI)/NRC Research Associateship Program (RAP)	75	-	75
	Total USUHS - Uniformed Services University of the Health Sciences:	198	-	198
	Total Fellowship and Other Support of Scholars:	27,574	91	27,665
Function: Pass-Through Funding:				
AIRF - Department of the Air Force:				
IST 10004469 PO 192577 (formerly FPH02-S034)	Infocitex (IST): Committee on Strengthening Air Force Human Capital Management	79	-	79
WBI 10005421 WBSRA-21-10-NAS	Wright Brothers Institute (WBI): Human-Systems Integration Research Topics for the 711th Human Performance Wing of the Air Force Research Laboratory	113	-	113
	Total AIRF - Department of the Air Force:	192	-	192
CDC - Centers for Disease Control and Prevention:				
NACCHO 10004411 2019-011503	National Association of County and City Health Officials (NACCHO): Prevention and Control of Sexually Transmitted Diseases in the United States	214	-	214
	Total CDC - Centers for Disease Control and Prevention:	214	-	214
DHHS - Department of Health and Human Services:				
PCORI 10001303 UNNUMBERED	Patient-Centered Outcomes Research Institute (PCORI): IOM Workshop on Observational Studies in a Learning Health System	352	-	352
	Total DHHS - Department of Health and Human Services:	352	-	352
DOE - Department of Energy:				
BATTELLE 10004264 4000165369	Battelle Memorial Institute (BATTELLE): India-U.S. Workshop on Nuclear Material Transport Security and Safety	59	-	59
SANDIA 10004737 2091228	Sandia National Laboratories (SANDIA): Radioactive Sources: Applications and Alternative Technologies	256	-	256
BATTELLE 10004970 530162	Battelle Memorial Institute (BATTELLE): Intersections between Violent Extremism and Radiological Security	62	-	62
	Total DOE - Department of Energy:	377	-	377
DOT - Department of Transportation:				
IOWADOT 10002881 UNNUMBERED	Iowa Department of Transportation (IOWADOT): 2016 through 2020 Biennial Asset Management Conference and Training on Implementation Strategies	15	-	15
GHSA 10003884 DTNH2216H00018	Governors Highway Safety Association (GHSA): National Cooperative Research and Evaluation Program (NCREP) FY-2016-2021	517	1,158	1,675
IOWADOT 10004235 TPF-5(379)	Iowa Department of Transportation (IOWADOT): Technology Exchange on Low Volume Road Design, Construction and Maintenance	8	-	8
	Total DOT - Department of Transportation:	540	1,158	1,698
EPA - Environmental Protection Agency:				
IDDEQ 10005003 K262	Idaho Department of Environmental Quality (IDDEQ): Future of Water Quality in Coeur d'Alene Lake	293	-	293
	Total EPA - Environmental Protection Agency:	293	-	293
INTR - Department of the Interior:				
UNRENO 10005464 UNR-22-42	University of Reno, Nevada (UNRENO): Expert Meetings: Cost and Benefits of Geologic Mapping	1	-	1
	Total INTR - Department of the Interior:	1	-	1
NAVY - Department of Navy:				
CTC 10005381 210500029S	Concurrent Technologies Corporation (CTC): Review of DOD's Revised Approach to OEL for TCE	123	-	123
	Total NAVY - Department of Navy:	123	-	123

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021
(in thousands)

Contract Identifier			Program Name	Direct Expenditures	Subrecipient Expenditures	Total Expenditures of Federal Awards
NSF - National Science Foundation:						
UMASS	10004590	18-009960 B 00	University of Massachusetts (UMASS): Collaborative Research: Transforming the Evaluation of Teaching: A Study of Institutional Change to Advance STEM Undergraduate Education	\$ 50	\$ -	\$ 50
UVA	10005213	GA11551.PO#2299322	University of Virginia (UVA): Promising RCR Practices	88	-	88
			Total NSF - National Science Foundation:	<u>138</u>	<u>-</u>	<u>138</u>
STAT - Department of State:						
CRDF	10004968	GT22-20-66727-0	CRDF Global (CRDF): Open Source Research and Capacity Building to Counter Nonproliferation Challenges	3	-	3
CRDF	10005248	PO20-00143	CRDF Global (CRDF): Addressing Disinformation via Scientific Collaboration	277	-	277
			Total STAT - Department of State:	<u>280</u>	<u>-</u>	<u>280</u>
			Total Pass-Through Funding:	<u>2,510</u>	<u>1,158</u>	<u>3,668</u>
			Total Expenditures of Federal Awards: Research and Development Cluster:	<u>\$ 148,850</u>	<u>\$ 46,505</u>	<u>\$ 195,355</u>

The accompanying schedule of expenditures of federal awards and notes to the 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, 2021

NOTE 1 - BASIS OF PRESENTATION

The accompanying schedule of expenditures of federal awards summarizes, at the agency or sub-agency level, the expenditures of the National Academy of Sciences ("NAS") under programs of the federal government for the year ended December 31, 2021.

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*.

National Academy of Sciences

**NOTES TO THE SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS AND
DETAILED SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS - CONTINUED**

For the year ended December 31, 2021

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.

GRANT THORNTON LLP

445 Broadhollow Road, Suite 300
Melville, NY 11747

D +1 631 249 6001
F +1 631 249 6144

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
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 National Academy of Sciences (“NAS”), which comprise the statement of financial position as of December 31, 2021, 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 14, 2022.

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.

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 14, 2022

GRANT THORNTON LLP

445 Broadhollow Road, Suite 300
Melville, NY 11747

D +1 631 249 6001
F +1 631 249 6144

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
National Academy of Sciences:

Report on compliance for each major federal program

Opinion on each major federal program

We have audited the compliance of 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, 2021. 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, 2021.

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.

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
July 13, 2022

National Academy of Sciences
SCHEDULE OF FINDINGS AND QUESTIONED COSTS
For the year ended December 31, 2021

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 no
- Significant deficiencies identified that are not considered to be material weakness(es)? yes none reported
- Noncompliance material to the financial statements noted? yes no

Federal Awards:

Internal control over the major program:

- Material weakness(es) identified? yes no
- Significant deficiencies identified that are not considered to be material weakness(es)? yes 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 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?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

National Academy of Sciences
SCHEDULE OF FINDINGS AND QUESTIONED COSTS (CONTINUED)
For the year ended December 31, 2021

SECTION II - FINANCIAL STATEMENT FINDINGS

None identified.

SECTION III - FEDERAL AWARD FINDINGS AND QUESTIONED COSTS

None identified.