CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY INFORMATION, INCLUDING UNIFORM GUIDANCE REPORTS AND SCHEDULES

Mayo Clinic Years Ended December 31, 2018 and 2017 With Reports of Independent Auditors

Ernst & Young LLP



Mayo Clinic

Consolidated Financial Statements and Supplementary Information, Including Uniform Guidance Reports and Schedules

Years Ended December 31, 2018 and 2017

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Report of Independent Auditors

Board of Trustees Mayo Clinic

We have audited the accompanying consolidated financial statements of Mayo Clinic (the "Clinic"), which comprise the consolidated statements of financial position as of December 31, 2018 and 2017, and the related consolidated statements of activities and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

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

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

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Mayo Clinic at December 31, 2018 and 2017, and the consolidated results of its operations and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

1903-3107433



Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The Schedules of Expenditures of Federal Awards and Florida State Financial Assistance 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 Chapter 10.650, Rules of the Auditor General of the State of Florida, are presented for purposes of additional analysis and are not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States. In our opinion, the information is fairly stated, in all material respects, in relation to the consolidated financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we also have issued our report dated February 19, 2019 on our consideration of Mayo Clinic's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. 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 Mayo Clinic's 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 Mayo Clinic's internal control over financial reporting and compliance.

Ernst + Young LLP

February 19, 2019, except for the schedules of expenditures of federal awards and Florida state financial assistance, for which the date is April 22, 2019

1903-3107433



Consolidated Statements of Financial Position December 31, 2018 and 2017 (In Millions)

	2018			2017
Assets				
Current assets:				
Cash and cash equivalents	\$	29	\$	66
Accounts receivable for medical services		1,828		1,791
Securities lending collateral		5		5
Other receivables		378		348
Other current assets		187		228
Total current assets		2,427		2,438
Investments		9,384		8,760
Investments under securities lending agreement		70		42
Other long-term assets		695		578
Property, plant and equipment, net		4,729		4,489
Total assets	\$	17,305	\$	16,307
Liabilities and Net Assets				
Current liabilities:				
Accounts payable	\$	464	\$	443
Accrued payroll		646		722
Accrued employee benefits		146		153
Deferred revenue		63		63
Mandatory tender debt		_		150
Long-term variable-rate debt		620		470
Securities lending payable		5		5
Other current liabilities		337		340
Total current liabilities		2,281		2,346
Long-term debt, net of current portion		2,800		2,413
Accrued pension and postretirement benefits, net of current portion		1,749		2,324
Other long-term liabilities		1,323		1,201
Total liabilities		8,153		8,284
Net assets:				
Without donor restrictions		5,937		5,018
With donor restrictions		3,215		3,005
Total net assets		9,152		8,023
Total liabilities and net assets	\$	17,305	\$	16,307

See notes to consolidated financial statements.



Consolidated Statements of Activities Years Ended December 31, 2018 and 2017 (In Millions)

	2018					2017				
	Without Donor		Without Donor With Donor		With	out Donor	With Donor			
	Res	trictions	Restrictions	Total	Res	strictions	Restrictions	Total		
Revenue, gains and other support:										
Medical service revenue	\$	10,608	\$ - \$	10,608	\$	9,937 \$	— \$	9,937		
Grants and contracts		494	_	494		449	_	449		
Investment return allocated to current activities		390	33	423		287	54	341		
Contributions available for current activities		57	172	229		59	179	238		
Other		849	_	849		1,019	_	1,019		
Net assets released from restrictions		260	(260)	<u> </u>		254	(254)	_		
Total revenue, gains and other support		12,658	(55)	12,603		12,005	(21)	11,984		
Expenses:										
Salaries and benefits		7,174	_	7,174		6,796	_	6,796		
Supplies and services		3,767	_	3,767		3,590	_	3,590		
Facilities		836	_	836		778	_	778		
Finance and investment		120	_	120		113	_	113		
Total expenses		11,897	_	11,897		11,277	_	11,277		
Income (loss) from current activities		761	(55)	706		728	(21)	707		
Noncurrent and other items:										
Contributions not available for current activities, net		(25)	276	251		(29)	198	169		
Unallocated investment return, net		(358)	(11)	(369)		392	203	595		
Income tax expense		(30)	_	(30)		(71)	_	(71)		
Gain from disposal of affiliates, net		_	_	_		21	_	21		
Other		(4)		(4)		_	_			
Total noncurrent and other items		(417)	265	(152)		313	401	714		
Increase in net assets before other changes in net assets		344	210	554		1,041	380	1,421		
Pension and other postretirement benefit adjustments		612	_	612		(565)	_	(565)		
Release of third party from affiliation		(37)	_	(37)		_	_	_		
Increase in net assets		919	210	1,129		476	380	856		
Net assets at beginning of year		5,018	3,005	8,023		4,542	2,625	7,167		
Net assets at end of year	\$	5,937	\$ 3,215 \$	9,152	\$	5,018 \$	3,005 \$	8,023		

See notes to consolidated financial statements.



Consolidated Statements of Cash Flows Years Ended December 31, 2018 and 2017 (In Millions)

	2018	2018	
Cash flows from operating activities:			
Change in net assets	\$ 1,129	\$	856
Adjustments to reconcile changes in net assets to net cash provided by			
operating activities:			
Depreciation and amortization	570		524
Provision for uncollectible accounts	17		6
Net realized and unrealized loss (gain) on investments	100		(808)
Restricted gifts, bequests and other	(376)		(186)
Net change in accounts receivable and other current assets and			
liabilities	(183)		(118)
Pension and other postretirement benefits adjustments	(575)		312
Net change in other long-term assets and liabilities	117		209
Net cash provided by operating activities	799		795
Cash flows from investing activities:			
Purchase of property, plant and equipment	(724)		(705)
Purchases of investments	(2,794)		(2,454)
Sales and maturities of investments	2,042		2,168
Proceeds from disposal of affiliates	_		67
Payment for release of third-party from affiliation	(13)		_
Net cash used in investing activities	(1,489)		(924)
Cash flows from financing activities:			
Restricted gifts, bequests and other	266		146
Borrowings on long-term debt	400		_
Payment of long-term debt	(13)		(8)
Net cash provided by financing activities	653		138
Net (decrease) increase in cash and cash equivalents	(37)		9
Cash and cash equivalents at beginning of period	 66		57
Cash and cash equivalents at end of period	\$ 29	\$	66

See notes to consolidated financial statements.

Note 1. Organization and Summary of Significant Accounting Policies

Organization: Mayo Clinic and its Arizona, Florida, Iowa, Minnesota and Wisconsin affiliates (the Clinic) provide comprehensive medical care and education in clinical medicine and medical sciences and conduct extensive programs in medical research. The Clinic also provides hospital and outpatient services, and at each major location, the clinical practice is closely integrated with advanced education and research programs. The Clinic and most of its subsidiaries have been determined to qualify as tax-exempt organizations under Section 501(c)(3) of the Internal Revenue Code (the Code) and as a public charity under Section 509(a)(2) of the Code.

Basis of presentation: Included in the Clinic's consolidated financial statements are all of its wholly owned or wholly controlled subsidiaries. All significant intercompany transactions have been eliminated in consolidation. In addition, these statements follow generally accepted accounting principles applicable to the not-for-profit industry as described in the Financial Accounting Standards Board's *FASB Accounting Standards Codification* (ASC) Topic 958.

Certain reclassifications have been made to the 2017 consolidated financial statements to conform with classifications used in 2018. The reclassifications had no significant effect on total assets, total liabilities, total revenue or total revenue in excess of expenses previously reported.

Use of estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements. Estimates also affect the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

New Accounting Standards:

Effective January 1, 2018, the Clinic adopted Financial Accounting Standards Board (FASB) Accounting Standard Update (ASU) 2014-09, *Revenue from Contracts with Customers (Topic 606)* using the full retrospective method of transition. This ASU converged and replaced existing revenue recognition guidance, including industry-specific guidance and requires revenue to be recognized in an amount that reflects the consideration the entity expects to be entitled in an exchange of goods or services. The adoption of this ASU did not materially impact the consolidated financial statements.

Effective December 31, 2018, the Clinic adopted FASB ASU No. 2016-14, *Presentation of Financial Statements of Not-for-Profit Entities (Topic 958)*. This ASU changes certain financial statement requirements for not-for-profit entities in an effort to make the information more meaningful to users and reduce reporting complexity. The Clinic adopted the ASU and has adjusted the presentation in these consolidated financial statements accordingly. The ASU has been applied retrospectively to all periods presented. The Clinic has elected to apply the practical expedient and not disclose prior year liquidity and availability of resources.

New Accounting Standards Not Yet Adopted:

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. This ASU requires the rights and obligations arising from the lease contracts, including existing and new arrangements, to be recognized as assets and liabilities on the consolidated statements of financial position. The ASU will require disclosures to help financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. The ASU was adopted by the Clinic January 1, 2019 using a modified retrospective approach. The primary effect of adopting the new standard is a \$149 increase in right-of-use assets and lease obligations for current operating leases.

Note 1. Organization and Summary of Significant Accounting Policies (Continued)

In March 2017, the FASB issued ASU No. 2017-07, *Compensation - Retirement Benefits (Topic 715)*. This ASU provides guidance on the presentation of service cost and other components of net periodic benefit cost in the consolidated statement of activities. The ASU was adopted by the Clinic January 1, 2019 using a retrospective approach. This resulted in \$89 credit of benefit costs other than service cost moving from salaries and benefits to noncurrent and other items in the consolidated statements of activities for the year ended December 31, 2018. This will result in \$134 credit being reported in noncurrent and other items for the year ended December 31, 2019.

In June 2018, the FASB issued ASU No. 2018-08, *Not-for-Profit Entities - Clarifying the Scope and Accounting Guidance for Contributions Received and Contributions Made (Topic 958)*. This ASU provides a more robust framework to determine when a transaction should be accounted for as a contribution or as an exchange transaction and provides additional guidance about how to determine whether a contribution is conditional. The ASU was adopted by the Clinic January 1, 2019 using a modified prospective basis. The adoption of this ASU did not have a significant effect.

In August 2018, the FASB issued ASU No. 2018-13, Fair Value Measurement (Topic 820). This ASU improves the effectiveness of the notes to financial statements through changes in the disclosure requirements for fair value measurement. The ASU is effective January 1, 2020 and will be applied using a retrospective approach. The Clinic is currently assessing the impact of this ASU on its consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-14, *Compensation - Retirement Benefits - Defined Benefit Plans (Topic 715)*. This ASU modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The ASU is effective January 1, 2021 and will be applied using a retrospective approach. The Clinic is currently assessing the impact of this ASU on its consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15, Intangibles - Goodwill and Other, Internal-Use software (Subtopic 350-40), Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. This ASU aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The ASU is effective January 1, 2021 and will be applied using a prospective approach. The Clinic is currently assessing the impact of this ASU on its consolidated financial statements.

Cash and equivalents: Cash and equivalents include currency on hand, demand deposits with banks or other financial institutions, and short-term investments with maturities of three months or less from the date of purchase, which are not managed by the Clinic's investment managers.

Accounts receivable for medical services: Accounts receivable for medical services are based upon the estimated amounts expected to be paid from patients and third-party payors.

Inventories: Inventories, consisting primarily of medical supplies and pharmaceuticals, are stated at the lower of cost or net realizable value, determined using the first-in, first-out method.

Investments: Investments in equity and debt securities, including alternative investments, are recorded at fair value (Notes 4 and 5). Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Realized gains and losses are calculated based on the average cost method. Investment income or loss (including realized and unrealized gains and losses on investments, interest and dividends) are included in the consolidated statements of activities.

Note 1. Organization and Summary of Significant Accounting Policies (Continued)

Alternative investments (principally limited partnership interests in absolute return, hedge, private equity, real estate and natural resources funds), represents the Clinic's ownership interest in the respective partnership, which is valued at net asset value (NAV) obtained from fund manager statements and historical audited financial statements. The investments in alternative investments may individually expose the Clinic to securities lending, short sales, and trading in futures and forward contract options and other derivative products. The Clinic's risk is limited to the investment's carrying value.

It is the Clinic's intent to maintain a long-term investment portfolio to support research, education and other activities. Accordingly, the total investment return is reported in the consolidated statements of activities in two categories. The investment return allocated to current activities is determined by a formula, which involves allocating five percent of a three-year moving average of investments related to endowments, the matching of financing costs for the assets required for operations and additional expenses covered by investment returns. Management believes this return is approximately equal to the real return that the Clinic expects to earn on its investments over the long term. The unallocated investment return, included in noncurrent and other items in the consolidated statements of activities, represents the difference between the total investment return and the amount allocated to current activities, net of investment costs.

Property, plant and equipment: Property, plant and equipment are carried at cost if purchased or at fair value on the date received through affiliation or donation, less accumulated depreciation. Plant and equipment are depreciated over estimated useful lives ranging from three to fifty years using the straight-line method. Depreciation expense is reflected in facilities expense and was \$570 and \$524 in 2018 and 2017, respectively, and includes amortization of assets recorded under capital leases.

Costs associated with the development and installation of internal-use software are accounted for in accordance with the *Intangibles—Goodwill and Other, Internal-Use Software* subtopic of the FASB ASC 350-40. Accordingly, internal-use software costs are expensed or capitalized and amortized according to the provisions of the accounting standard.

Deferred revenue: Deferred revenue consists of payments received in advance for grant, subscription and tuition revenue. Deferred revenues are subsequently recognized as revenue in accordance with the Clinic's revenue recognition policies.

Deferred compensation: The Clinic offers eligible employees a nonqualified, tax-deferred compensation retirement plan. Employees defer compensation into the plan on a pretax basis. For the most part, the plan operates similar to a defined contribution plan.

Asset retirement obligations: The Clinic accounts for the estimated cost of legal obligations associated with long-lived asset retirements in accordance with the Asset Retirement and Environmental Obligations topic of the FASB ASC. The asset retirement liability, recorded in other long-term liabilities, is accreted to the present value of the estimated future costs of these obligations at the end of each period.

Net assets: Net assets, revenues, gains, and losses are classified based on the existence or absence of donor or grantor imposed restrictions. Accordingly, net assets and changes therein are classified and reported as follows:

Net Assets Without Donor Restrictions - Net assets available for use in general operations and not subject to donor restrictions. The governing board has designated, from net assets without donor restrictions, net assets for an operating reserve and board-designated endowment.

Net Assets With Donor Restrictions - Net assets subject to donor imposed restrictions. Some donor-imposed restrictions are temporary in nature, such as those that will be met by the passage of time or

Note 1. Organization and Summary of Significant Accounting Policies (Continued)

other events specified by the donor. Other donor-imposed restrictions are perpetual in nature, where the donor stipulates that resources be maintained in perpetuity. Gifts of long-lived assets and gifts of cash restricted for the acquisition on long-lived assets are recognized as revenue when received. Donor-imposed restrictions are released when a restriction expires, that is, when the stipulated time has elapsed, when the stipulated purpose for which the resource was restricted has been fulfilled, or both.

Medical service revenue: Medical service revenue is reported at the amount that reflects the consideration to which the Clinic expects to be entitled in exchange for providing patient care.

Grants and contracts: Reciprocal grants and contracts revenue is recognized when the expenses have been incurred for the purpose specified by the grantor or in accordance with the terms of the agreement. Grant and contract amounts due to the Clinic are included in other receivables.

Charity and uncompensated care: The Clinic provides health care services to patients who meet certain criteria under its Charity Care Policy without charge or at amounts less than established rates. Since the Clinic does not pursue collection of these amounts, they are not reported as revenue. The estimated cost of providing these services was \$78 and \$72 in 2018 and 2017, respectively, calculated by multiplying the ratio of cost to gross charges for the Clinic by the gross uncompensated charges associated with providing care to charity patients. In addition to the charges related to the direct patient care provided under the Clinic's Charity Care Policy, the Clinic has programs offered to benefit the broader community and other governmental reimbursement programs. The Clinic also participates in various state Medicaid programs for indigent patients. The estimated unreimbursed cost of providing services related to Medicaid programs totaled \$511 and \$503 in 2018 and 2017, respectively.

Contributions: The Clinic classifies contributions that are available for current activities as revenue, based on the lack of specific donor restriction or the presence of donor restrictions and the ability of the Clinic to meet those restrictions within the year. Contributions of a perpetual nature or not available for current activities are classified in noncurrent and other items in the consolidated statements of activities. Development expenses of \$45 (\$20 allocated to current and \$25 allocated to noncurrent) and \$43 (\$24 allocated to current and \$19 allocated to noncurrent) were incurred in 2018 and 2017, respectively. The current portion is recorded in expenses, and the noncurrent portion is netted against contributions not available for current activities in the consolidated statements of activities. Unconditional promises to give and contributions are reported at fair value at the time of the gift. An allowance for uncollectible pledges receivable is estimated based on a combination of historical experience and specific identification. Conditional promises to give are recognized at fair value when the conditions on which they depend are substantially met or the probability that the condition will not be met is remote.

The Clinic periodically receives works of art from various benefactors. These items are unique in nature and are held on display for the benefit and enjoyment of the Clinic's patients. It is the Clinic's policy to neither capitalize contributed works of art nor record the related contribution revenue.

Income from current activities: The Clinic's policy is to include in income from current activities all medical service and other revenue, grants and contracts, investment return allocated to current activities, contributions available for current activities, net assets released from restrictions, and substantially all expenses. Contributions not available for current activities, unallocated investment return, and those items not expected to recur on a regular basis, such as disposal of an affiliate, are included in noncurrent and other items in the consolidated statements of activities.

Subsequent events: The Clinic evaluated events and transactions occurring subsequent to December 31, 2018, through February 19, 2019, the date of issuance of the consolidated financial statements. During this period, there were no subsequent events requiring recognition in the consolidated financial statements. Additionally, there were no unrecognized events requiring disclosure.

Note 2. Liquidity and Availability

Financial assets available for general expenditure within one year of the balance sheet date, comprise the following at December 31:

	2018
Cash and cash equivalents	\$ 29
Accounts receivable	1,828
Promises to give	170
Grants receivable	89
Other receivables	119
Investments	5,613
Total financial assets available within one year	\$ 7,848

The Clinic's endowment funds consist of donor-restricted endowments and funds designated by the board as endowment. Income from endowments is restricted for specific purposes. As described in Note 12, the Clinic has a spending policy and \$187 of appropriation from the endowments will be available in the next twelve months. As part of a liquidity management plan, the Clinic has a policy to structure its financial assets to be available as its general expenditures, liabilities, and other obligations come due. Cash in excess of daily requirements is invested in short-term investments. In the event of an unanticipated liquidity need, the Clinic has \$100 of available lines of credit for working capital (see Note 8 - Financing).

Note 3. Medical Service Revenue

Medical service revenue is reported at the amount that reflects the consideration to which the Clinic expects to be entitled in exchange for providing patient care. These amounts, representing transaction price, are due from patients, third-party payors (including health insurers and government programs), and others and includes variable consideration for retroactive revenue adjustments due to settlement of audits, reviews, and investigations. Generally, the Clinic bills the patients and third-party payors several days after the services are performed and/or the patient is discharged from the facility. Revenue is recognized as performance obligations are satisfied.

Performance obligations are determined based on the nature of the services provided by the Clinic. Revenue for performance obligations satisfied over time is recognized based on actual charges incurred in relation to total expected (or actual) charges. The Clinic believes that this method provides a faithful depiction of the transfer of services over the term of the performance obligation based on the inputs needed to satisfy the obligation. Generally, performance obligations satisfied over time relate to patients in the Clinic's hospital(s) receiving inpatient acute care services. The Clinic measures the performance obligation from admission into the hospital to the point when it is no longer required to provide services to that patient, which is generally at the time of discharge. Revenue for performance obligations satisfied at a point in time is recognized when goods or services are provided and the Clinic does not believe it is required to provide additional goods or services to the patient.

Because all of its performance obligations relate to contracts with a duration of less than one year, the Clinic has elected to apply the optional exemption provided in FASB ASC 606-10-50-14(a) and, therefore, is not required to disclose the aggregate amount of the transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period. The unsatisfied or partially unsatisfied performance obligations referred to above are primarily related to inpatient acute care services at the end of the reporting period. The performance obligations for these contracts are generally

Note 3. Medical Service Revenue (Continued)

completed when the patients are discharged, which generally occurs within days or weeks of the end of the reporting period.

The Clinic determines the transaction price based on standard charges for goods and services provided to patients, reduced by contractual adjustments provided to third-party payors, discounts provided to uninsured patients in accordance with the Clinic's policy, and/or implicit price concessions based on historical collection experience.

Agreements with third-party payors typically provide for payments at amounts less than established charges. A summary of the payment arrangements with major third-party payors follows:

- Medicare: Certain inpatient acute care services are paid at prospectively determined rates per discharge based on clinical, diagnostic and other factors. Certain services are paid based on cost-reimbursement methodologies subject to certain limits. Physician services are paid based upon established fee schedules. Outpatient services are paid using prospectively determined rates.
- Medicaid: Reimbursements for Medicaid services are generally paid at prospectively determined rates per discharge, per occasion of service, or per covered member.
- Other: Payment agreements with certain commercial insurance carriers, health maintenance organizations, and preferred provider organizations provide for payment using prospectively determined rates per discharge, discounts from established charges, and prospectively determined daily rates.

Laws and regulations concerning government programs, including Medicare and Medicaid, are complex and subject to varying interpretation. As a result of investigations by governmental agencies, various health care organizations have received requests for information and notices regarding alleged noncompliance with those laws and regulations, which, in some instances, have resulted in organizations entering into significant settlement agreements. Compliance with such laws and regulations may also be subject to future government review and interpretation, as well as significant regulatory action, including fines, penalties, and potential exclusion from the related programs. There can be no assurance that regulatory authorities will not challenge the Clinic's compliance with these laws and regulations, and it is not possible to determine the impact (if any) such claims or penalties would have upon the Clinic. In addition, the contracts the Clinic has with commercial payors also provide for retroactive audit and review of claims.

Generally, patients who are covered by third-party payors are responsible for related deductibles and coinsurance, which vary in amount. The Clinic also provides services to uninsured patients, and offers those uninsured patients a discount, either by policy or law, from standard charges. The Clinic estimates the transaction price for patients with deductibles and coinsurance and from those who are uninsured based on historical experience and current market conditions. The initial estimate of the transaction price is determined by reducing the standard charge by any contractual adjustments, discounts, and implicit price concessions. Subsequent changes to the estimate of the transaction price are generally recorded as adjustments to medical service revenue in the period of the change. For the twelve months ended December 31, 2018 and 2017, revenue recognized due to changes in its estimates of transaction price concessions for performance obligations satisfied in prior years was \$11 and \$6, respectively. Subsequent changes that are determined to be the result of an adverse change in the patient's ability to pay are recorded as bad debt expense. Bad debt expense for the twelve months ended December 31, 2018 and 2017, was \$17 and \$6, respectively.

Note 3. Medical Service Revenue (Continued)

Settlements with third-party payors for retroactive adjustments due to audits, reviews, or investigations are considered variable consideration and are included in the determination of the estimated transaction price for providing patient care. These settlements are estimated based on the terms of the payment agreement with the payor, correspondence from the payor, and the Clinic's historical settlement activity, including an assessment to ensure it is probable a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the retroactive adjustment is subsequently resolved. Estimated settlements are adjusted in future periods as adjustments become known (that is, new information becomes available), or as years are settled or are no longer subject to such audits, reviews, and investigations. Adjustments arising from a change in the transaction price, were not significant in 2018 or 2017.

Patients who meet the Clinic's criteria for charity care are provided care without charge or at amounts less than established rates. Such amounts determined to qualify as charity care are not reported as revenue.

Note 3. Medical Service Revenue (Continued)

The composition of medical service revenue based on the regions of the country the Clinic operates in, its lines of business, and timing of revenue recognition for the twelve months ended December 31, 2018 and 2017 are as follows:

	December 31, 2018							
	N	lidwest	So	utheast	So	uthwest		Total
Hospital	\$	4,056	\$	660	\$	888	\$	5,604
Clinic		3,057		596		595		4,248
Senior Care & Nursing Home		19		_		_		19
Other		46						46
Total patient care service revenue		7,178		1,256		1,483		9,917
External lab		691						691
Total medical service revenue	\$	7,869	\$	1,256	\$	1,483	\$	10,608
Timing of revenue and recognition:								
At time services are rendered	\$	3,794	\$	596	\$	595	\$	4,985
Services transferred over time		4,075		660		888		5,623
Total	\$	7,869	\$	1,256	\$	1,483	\$	10,608
			0-	Decembe				T-4-1
114-1	\$	lidwest		utheast		uthwest		Total
Hospital	Ъ	3,835	\$	623	\$	806	\$	5,264
Clinic		2,842		555		567		3,964
Senior Care & Nursing Home		20		4		_		24
Other		44				4.070		9, 200
Total patient care service revenue		6,741		1,182		1,373		9,296
External lab		641						641
Total medical service revenue	\$	7,382	\$	1,182	\$	1,373	\$	9,937
Timing of revenue and recognition:								
At time services are rendered	\$	3,527	\$	555	\$	567	\$	4,649
Services transferred over time		3,855		627		806		5,288
Total	\$	7,382	\$	1,182	\$	1,373	\$	9,937

Hospital revenue includes a variety of services mainly covering inpatient procedures requiring overnight stays or outpatient operations that require anesthesia or use of complex diagnostic and surgical equipment, as well as emergency care for traumas and other critical conditions. Clinic revenue includes services primarily focused on the care of outpatients covering primary and specialty healthcare needs. The Clinic's practice is to record certain radiology, pathology and other hospital related services in the Midwest region as clinic revenue in the amount of \$980 and \$874 for the twelve months ended December 31, 2018 and 2017, respectively. Examples of revenue at time services are rendered include clinical services, lab and transport; and services transferred over time include hospital and senior care revenue.

Note 3. Medical Service Revenue (Continued)

The composition of medical service revenue by payor for the twelve months ended December 31, is as follows:

	2018			2017
Medicare	\$	2,518	\$	2,358
Medicaid		326		291
Contract		6,251		5,691
Other, including self-pay		1,513		1,597
Total	\$	10,608	\$	9,937

The Clinic's practice is to assign a patient to the primary payor and not reflect other uninsured balances (for example, copays and deductibles) as self-pay. Therefore the payors listed above contain patient responsibility components, such as co-pays and deductibles.

Financing component:

The Clinic has elected the practical expedient allowed under FASB ASC 606-10-32-18 and does not adjust the promised amount of consideration from patients and third-party payors for the effects of a significant financing component due to the Clinic's expectation that the period between the time the service is provided to a patient and the time that the patient or a third-party payor pays for that service will be one year or less. However, the Clinic does, in certain instances, enter into payment agreements with patients that allow payments in excess of one year. For those cases, the financing component is not deemed to be significant to the contract.

Note 4. Fair Value Measurements

The Clinic holds certain financial instruments that are required to be measured at fair value on a recurring basis. The valuation techniques used to measure fair value under the *Fair Value Measurements and Disclosures* topic of the FASB ASC 820 are based upon observable and unobservable inputs. The standard establishes a three-level valuation hierarchy for disclosure of fair value measurements. The valuation hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows:

- **Level 1:** Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- **Level 2:** Inputs to the valuation methodology include quoted prices for similar assets or liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the same term of the financial instrument.
- **Level 3:** Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The Clinic's policy is to recognize transfers in and transfers out as of the actual date of the event or change in circumstances that caused the transfer. There were no significant transfers or activity within Levels for the twelve months ended December 31, 2018 and 2017.

Note 4. Fair Value Measurements (Continued)

The following tables present the financial instruments carried at fair value as of December 31, 2018 and 2017, by caption on the consolidated statements of financial position categorized by the valuation hierarchy and NAV:

	December 31, 2018											
				,				-	Total			
	Le	evel 1	Le	evel 2	Level 3		el 3 NAV			r Value		
Assets:	•	_	•				_		•	_		
Securities lending collateral	\$	5	\$		\$		\$		\$	5		
Investments:												
Cash and equivalents		1,372		_				_		1,372		
Fixed-income securities:												
U.S. government		_		288		_		_		288		
U.S. government agencies		_		352				_		352		
U.S. corporate		_		297		_		_		297		
Foreign		_		27				_		27		
Common and preferred stocks:												
U.S.		533		_				_		533		
Foreign		349		_				_		349		
Funds:												
Fixed-income		454		_				_		454		
Equities		531		451				_		982		
Other investments		_		18		_		_		18		
Less securities under lending												
agreement		(70)		_				_		(70)		
Investments at NAV		_						4,782		4,782		
Total investments		3,169		1,433		_		4,782		9,384		
Investments under securities												
lending agreement		70		_				_		70		
Other long-term assets:												
Trust receivables		60		28		57		_		145		
Technology-based ventures		_		_		32		_		32		
Total other long-term										477		
assets	Φ.	3,304	\$	28 1,461	Φ	89	\$	4 702	•	177		
Total assets at fair value	\$	3,304	<u>Ф</u>	1,401	\$	89	<u>Ф</u>	4,782	\$	9,636		
Liabilities:												
Securities lending payable	\$	5	\$		\$	_	\$		\$	5		
Total liabilities at fair value	\$	5	\$		\$		\$		\$	5		

Note 4. Fair Value Measurements (Continued)

	December 31, 2017									
					Total					
	Level 1	Level 2 Level 3		NAV	Fair Value					
Assets:										
Securities lending collateral	\$ 5	<u> </u>	<u>\$</u>	<u> </u>	\$ 5					
Investments:										
Cash and equivalents	1,093			_	1,093					
Fixed-income securities:										
U.S. government		204	_	_	204					
U.S. government agencies	_	318	_	_	318					
U.S. corporate	_	297	3	_	300					
Foreign	_	17	_	_	17					
Common and preferred stocks:										
U.S.	529	_	_	_	529					
Foreign	350				350					
Funds:										
Fixed-income	420		_	_	420					
Equities	607	476	_	_	1,083					
Other investments	(22)		_	_	(22)					
Less securities under lending										
agreement	(42)	_	_	_	(42)					
Investments at NAV	_	_	_	4,510	4,510					
Total investments	2,935	1,312	3	4,510	8,760					
Investments under securities										
lending agreement	42	_	_	_	42					
3 3 3 3 3										
Other long-term assets:										
Trust receivables	75	29	58	_	162					
Technology-based ventures	_	_	19	_	19					
Total other long-term assets	75	29	77		181					
Total assets at fair value	\$ 3,057	\$ 1,341	\$ 80	\$ 4,510	\$ 8,988					
Liabilities:										
Securities lending payable	\$ 5	\$ —	\$ —	\$	\$ 5					
Total liabilities at fair value	\$ 5	\$ —	\$ —	\$ —	\$ 5					

The following is a description of the Clinic's valuation methodologies for assets and liabilities measured at fair value. Fair value for Level 1 is based upon quoted market prices. Fair value for Level 2 is based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market or can be corroborated by observable market data for substantially the full term of the assets. Inputs are obtained from various sources, including market participants, dealers and brokers. Level 3 primarily consists of trusts recorded at fair value based on the underlying value of the

Note 4. Fair Value Measurements (Continued)

assets in the trust or discounted cash flow of the expected payment streams. The trusts reported as Level 3 are primarily perpetual trusts managed by third parties invested in stocks, mutual funds, and fixed-income securities that are traded in active markets with observable inputs, and since the Clinic will never receive the trust assets, these perpetual trusts are reported as Level 3.

The methods described above and those recorded at NAV may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Clinic believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

The following information pertains to those alternative investments recorded at NAV in accordance with the Fair Value Measurements and Disclosures topic of the FASB ASC 820.

At December 31, 2018, alternative investments recorded at NAV consisted of the following:

				Redemption	Redemption
	Fair	Unfunded		Frequency (If	Notice
	Value	Con	nmitment	Currently Eligible)	Period
					·
Absolute return/hedge funds (a)	\$ 2,217	\$	_	Monthly to annually	30–90 days
Private partnerships (b)	2,565		1,159		
Total alternative investments	\$ 4,782	\$	1,159		

At December 31, 2017, alternative investments recorded at NAV consisted of the following:

				Redemption	Redemption
	Fair	Un	funded	Frequency (If	Notice
	Value	Com	nmitment	Currently Eligible)	Period
Absolute return/hedge funds (a)	\$ 2,354	\$	_	Monthly to annually	30–90 days
Private partnerships (b)	2,156		1,053		
Total alternative investments	\$ 4,510	\$	1,053		

- (a) This category includes investments in absolute return/hedge funds, which are actively managed commingled investment vehicles that derive the majority of their returns from factors other than the directional flow of the markets in which they invest. Representative strategies include high-yield credit, distressed debt, merger arbitrage, relative value, and long-short equity strategies. The fair values of the investments in this category have been estimated using the NAV per share of the investments. Investments in this category generally carry "lockup" restrictions that do not allow investors to seek redemption in the first year after acquisition. Following the initial lockup period, liquidity is generally available monthly, quarterly or annually following a redemption request. Over 90 percent of the investments in this category have at least annual liquidity.
- (b) This category includes limited partnership interests in closed-end funds that focus on venture capital, private equity, real estate and resource-related strategies. The fair values of the investments in this category have been estimated using the NAV of the Clinic's ownership interest in partners' capital. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is estimated that the underlying assets of most funds will generally be liquidated over a seven- to ten-year period.

Note 4. Fair Value Measurements (Continued)

From time to time, the Clinic invests directly in certain derivative contracts that do not qualify for hedge accounting and are recorded at fair value in investments. Changes in fair value are reported as a component of net unrealized gains or losses in the investment returns. These contracts are used in the Clinic's investment management program to minimize certain investment risks. During the years ended December 31, 2018 and 2017, the realized and unrealized loss from derivative contracts totaled \$4 and \$33, respectively.

The carrying values of cash and cash equivalents, and short-term investments, accounts receivable, other current assets, accounts payable and accrued expenses are reasonable estimates of their fair value due to the short-term nature of these financial instruments. The estimated fair value of long-term debt, based on quoted market prices for the same or similar issues (Level 2), was approximately \$79 and \$170 more than its carrying value at December 31, 2018 and 2017, respectively. Other long-term assets and liabilities have a carrying value that approximates fair value.

The Clinic uses various external investment managers to diversify the investments. The largest allocation to any investment strategy manager as of December 31, 2018 and 2017, is \$458 (6.2 percent) and \$426 (6.2 percent), respectively.

The Clinic is required to maintain funds held by trustees under bond indentures and other arrangements. The trustee-held investments, which primarily consist of mutual funds, were \$685 and \$589, respectively, at December 31, 2018 and 2017, which includes segregated investments for deferred compensation plans of \$586 at December 31, 2018 and 2017.

At December 31, 2018 and 2017, cash and mutual funds included segregated investments owned by Mayo Foundation for Medical Education and Research, a wholly owned subsidiary of Mayo Clinic, for gift annuity reserves of \$121 and \$106, respectively.

The Clinic has internally designated investment balances of \$2,253 and \$2,243 at December 31, 2018 and 2017, respectively, for research, education, and capital replacement and expansion.

Note 5. Securities Lending

The Clinic has an arrangement with its investment custodian to lend Clinic securities to approved brokers in exchange for a fee. Among other provisions that limit the Clinic's risk, the securities lending agreement specifies that the custodian is responsible for lending securities and obtaining adequate collateral from the borrower. Collateral is limited to cash, government securities, and irrevocable letters of credit. Investments are loaned to various brokers and are returnable on demand. In exchange, the Clinic receives collateral. The cash collateral is shown as both an asset and a liability on the consolidated statements of financial position.

At December 31, 2018 and 2017, the aggregate market value of securities on loan under securities lending agreements totaled \$70 and \$42, respectively, and the total value of the collateral supporting the securities is \$74 and \$44, respectively, which represents 106 percent and 104 percent, respectively, of the value of the securities on loan at December 31, 2018 and 2017. The cash portion of the collateral supporting the securities as of December 31, 2018 and 2017, is \$5. Noncash collateral provided to the Clinic is not recorded in the consolidated statements of financial position, as the collateral may not be sold or repledged. The Clinic's claim on such collateral is limited to the market value of loaned securities. In the event of nonperformance by the other parties to the securities lending agreements, the Clinic could be exposed to a loss.

Note 6. Property, Plant and Equipment, Net

Property, plant and equipment, net, at December 31 consisted of the following:

	2018		2017
Land	\$	296 \$	291
Buildings and improvements		5,756	5,546
Furniture and equipment		4,233	3,939
		10,285	9,776
Accumulated depreciation and amortization		(5,941)	(5,542)
		4,344	4,234
Construction in progress		385	255
Total property, plant and equipment	\$	4,729 \$	4,489

The above costs and accumulated depreciation include costs for capitalized software, including costs capitalized in accordance with the Intangibles—Goodwill and Other, Internal-Use Software subtopic of the FASB ASC Topic 350. The total cost for capitalized software was \$1,052 and \$891, and the total accumulated amortization was \$597 and \$543 at December 31, 2018 and 2017, respectively. Amortization expense for capitalized software was \$84 and \$54 for 2018 and 2017, respectively.

Note 7. Income Taxes

Most of the income received by the Clinic and its subsidiaries is exempt from taxation under Section 501 (a) of the Code. Some of its subsidiaries are taxable entities, and some of the income received by otherwise exempt entities is subject to taxation as unrelated business income (UBI). The Clinic and its subsidiaries file income tax returns in the U.S. federal, various state, and foreign jurisdictions. The statutes of limitations for tax years 2015 through 2017 remain open in the major U.S. taxing jurisdictions in which the Clinic and subsidiaries are subject to taxation.

The Internal Revenue Service (IRS) performed an examination of the tax and information returns of the Clinic and two subsidiaries for 2005 and 2006. The IRS has concluded a limited-scope audit of the Clinic for tax year 2011. As of December 31, 2015, the IRS proposed an \$11 tax and interest assessment for 2005 through 2012 that the Clinic paid. The Clinic has filed a claim for refund for these amounts, which was rejected by the IRS. The Clinic is litigating the denial of the claims in U.S. District Court. Management has taken this into consideration during its determination of unrecognized tax benefits.

The Clinic has recorded \$2, including interest and penalties, for uncertain tax positions during the year ended December 31, 2018. As of December 31, 2018 and 2017, the reserve totaled \$14 and \$12, respectively. It is not anticipated that a significant change in the reserve will occur over the next 12 months.

The Clinic's practice is to recognize interest and/or penalties related to income tax matters in income tax expense. The components of tax expense are as follows:

	December 31		
	20	018	2017
Current—federal	\$	22 \$	36
Current—state		4	6
		26	42
Deferred—U.S. domestic		4	29
Total	\$	30 \$	71

Cash payments for income taxes were \$22 and \$38 for the years ended December 31, 2018 and 2017, respectively.

Note 7. Income Taxes (Continued)

The Clinic records deferred income taxes due to temporary differences between financial reporting and tax reporting for certain assets and liabilities of its taxable activities. The following is a summary of the components of deferred taxes as of December 31:

Deferred compensation \$ 12 \$ 13 Pension 10 15 Postretirement benefits 4 5 Other 11 8 Total deferred tax asset 37 41 Deferred tax liability (3) (3) Valuation allowance (16) (12)		2	018	2017
Postretirement benefits 4 5 Other 11 8 Total deferred tax asset 37 41 Deferred tax liability (3) (3) Valuation allowance (16) (12)	Deferred compensation	\$	12 \$	13
Other 11 8 Total deferred tax asset 37 41 Deferred tax liability (3) (3) Valuation allowance (16) (12)	Pension		10	15
Total deferred tax asset 37 41 Deferred tax liability (3) (3) Valuation allowance (16) (12)	Postretirement benefits		4	5
Deferred tax liability Valuation allowance (3) (16) (12)	Other		11	8
Valuation allowance (16) (12)	Total deferred tax asset		37	41
	Deferred tax liability		(3)	(3)
Not defermed to a cost	Valuation allowance		(16)	(12)
inet deletred tax asset \$ 18 \$ 26	Net deferred tax asset	\$	18 \$	26

As of December 31, 2018, the Clinic had federal net operating losses of \$5.

The Tax Cuts and Jobs Act (Tax Act) was enacted on December 22, 2017. The Tax Act reduces the US federal corporate tax rate from 35 percent to 21 percent, required companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, and creates new taxes on certain foreign sourced earnings. The Clinic was not impacted by the transition tax as its foreign sourced earnings are in the form of dividends or royalties which are exempt from unrelated business income tax. Likewise, the Clinic's foreign sourced earnings are also not impacted by the Global Intangible Low-Taxed Income provisions of the Tax Act.

At December 31, 2018, the Clinic has accounted for the reduction in US federal corporate tax rate and other domestic tax provisions of the Tax Act. The Clinic has applied the rate change effect on existing deferred tax balances. Furthermore, in relation to the international provisions in the Tax Act, and based on current guidance, the Clinic does not anticipate a material impact from the international provisions, but further guidance from the Internal Revenue Service regarding application of these provisions to tax-exempt entities will be necessary in order to confirm that no material impact will occur.

At December 31, 2018 and 2017, deferred tax assets and liabilities were measured and remeasured based on the rates at which they are expected to reverse in the future, which is generally 21 percent. At December 31, 2017, the provisional amount recorded related to the remeasurement of the deferred tax balance was \$19.

Note 8. Financing

Long-term debt at December 31 consisted of the following:

	2018	2017
City of Rochester, Minnesota Revenue Bonds issued in various series, subject to variable interest rates to a maximum rate of 15.00% (the average rate was 1.52% in 2018 and 0.86% in 2017), principal due in varying amounts from 2028 through 2052	\$ 545 \$	395
City of Rochester, Minnesota Revenue Bonds originally issued at variable interest rate, converted in 2017 to fixed interest rate of 2.196% based on a provision to increase the rate if the federal tax rate is decreased, the rate has been adjusted to 2.67% effective January 1, 2018 through 2027, principal due in varying amounts from 2022 through 2032	200	200
City of Rochester, Minnesota Revenue Bonds issued in various series with fixed rates of interest ranging from 4.00% to 4.93%, principal due in varying amounts from 2030 through 2048	665	615
City of Rochester, Minnesota Health Care Facilities Revenue Refunding Bonds, series 2016B, issued with fixed interest rate of 5.00%, an effective rate of 2.97% in 2018 and 2017 after amortization of premium, principal due in varying amounts from 2029 through 2036 (unamortized premium of \$64 in 2018 and \$68 in 2017)	220	220
Industrial Development Authority of the City of Phoenix, Arizona issued in various series, subject to variable interest rates to a maximum rate of 10.00% (the average rate was 1.31% in 2018 and 0.74% in 2017), principal due in varying amounts from 2048 through 2052	180	180
City of Jacksonville, Florida Health Care Facilities Revenue Refunding Bonds, series 2016, issued in various series, subject to variable interest rates to a maximum rate of 10.00% (the average rate 1.58% in 2018 and 0.86% in 2017), principal due in varying amounts from 2033 through 2047	125	125
Wisconsin Health and Educational Facilities Authority Revenue Bonds, Series 2008, issued in various series, with fixed interest rates ranging from 4.75% to 5.75%, principal due in varying amounts through 2030	63	67
Mayo Clinic Taxable Bonds issued with fixed interest rates ranging from 3.774% to 4.128%, principal due in varying amounts from 2039 through 2052	950	950
Fixed-rate notes, payable to insurance companies, interest rates at 4.20% to 4.71%, principal due in varying amounts from 2042 through 2058	415	215
Other notes payable	13	15
Unamortized discounts and premiums, net	61	69
Debt issuance cost	(13)	(14)
	3,424	3,037
Long-term variable-rate debt classified as current	(620)	(470)
Long-term debt subject to mandatory tender for purchase	_	(150)
Current maturities included in other current liabilities	(4)	(4)
Long-term debt, net of current portion	\$ 2,800 \$	2,413

Note 8. Financing (Continued)

The Clinic's outstanding revenue bond issues are limited obligations of various issuing authorities payable solely by the Clinic pursuant to loan agreements between the borrowing entities and the issuing authorities. Under various financing agreements, the Clinic must meet certain operating and financial performance covenants.

At December 31, 2018, the \$850 of variable-rate bonds consist of variable-rate demand revenue bonds. In conjunction with the issuance of the variable-rate demand revenue bonds, the Clinic has entered into various bank standby purchase and credit agreements in the amount of \$230 that expire at various dates commencing with \$50 in January 2020 and \$180 that expire in May 2020. Under the terms of these agreements, the bank will make liquidity loans to the Clinic in the amount necessary to purchase a portion of the variable-rate demand revenue bonds if not remarketed. The liquidity loans would be payable over a three- to five-year period, with the first payment due after December 31, 2019. The Clinic has provided self-liquidity for the remaining \$620 of variable-rate demand revenue bonds, which have been classified as current in the accompanying consolidated statements of financial position.

The Clinic's \$150 City of Rochester, Minnesota Revenue Bonds Series 2011 AB fixed rate bonds were subject to mandatory tender for purchase on November 15, 2018, and, therefore, were classified as current at December 31, 2017. In November 2018, these bonds were remarketed and converted to variable rate bonds.

The \$220 fixed-rate revenue bonds Series 2016B are not callable. The remaining fixed-rate interest revenue bonds are callable from 2019 to 2058 at the option of the Clinic, at a redemption price of 100 percent of the principal amount or at a price based on U.S. Treasury rates at the time of redemption.

In 2017, the Clinic's \$200 City of Rochester, Minnesota Health Care Facilities Revenue Bonds Series 2002 AB&C variable rate bonds were acquired by a bank through a direct purchase for ten years at an initial fixed interest rate of 2.20 percent. The bond modification was accounted for as an extinguishment of debt. The loss on extinguishment was not significant. On January 1, 2018, the interest rate was automatically adjusted to 2.67 percent based on a provision to increase the rate if the federal tax rate decreased.

In October 2018, the Clinic issued \$200 in tax exempt, fixed rate bonds (City of Rochester, Minnesota Health Care Facilities Revenue Bonds), due in varying amounts from 2044 through 2048. The bonds were issued at a premium. The proceeds of the bonds will be used for construction, renovation and equipping of various Clinic buildings and facilities throughout Rochester, including the Saint Marys hospital modernization and growth plan. The bonds are callable in 2028.

In November 2018, the Clinic issued taxable bonds through a private placement transaction with an insurance company in the amount of \$200 for general corporate purposes due with a 4.20 percent fixed rate of interest due in equal amounts from 2054 to 2058. These bonds are redeemable prior to maturity at a price based on U.S. Treasury rates.

Note 8. Financing (Continued)

The following are scheduled maturities of long-term debt for each of the next five years, assuming the variable-rate demand revenue bonds are remarketed and the standby purchase agreements are renewed. As described above, if such bonds are not remarketed, \$620 may be due in 2019 and \$230 may be due in years from 2020 to 2023.

Years ending December 31:

2019	\$ 4
2020	5
2021	5
2022	43
2023	41

Interest payments on long-term debt, net of amounts capitalized for 2018 and 2017, totaled \$98 and \$92, respectively. The amount of interest capitalized, net of related interest income, was \$6 during 2018 and 2017. Interest expense totaled \$99 and \$94 for 2018 and 2017, respectively.

At December 31, 2018 and 2017, the Clinic had unsecured lines of credit available with banks that totaled \$625, with varying renewable terms and interest up to 2.50 percent over various published rates. There were no amounts drawn during December 31, 2018 and 2017.

Note 9. Lease Commitments

Certain leases are classified as capital leases. The leased assets are included as part of property, plant and equipment (Note 6), and the capital lease obligations of \$46 and \$48 as of December 31, 2018 and 2017, respectively, are recorded in other current and long-term liabilities. Other leases are classified as operating and are not capitalized. The payments on such leases are recorded as expense.

Details of the capitalized lease assets are as follows at December 31:

	2	018	2017
Buildings and equipment	\$	33 \$	33
Furniture and equipment		41	35
		74	68
Accumulated depreciation		(27)	(18)
Total	\$	47 \$	50

Rental expense incurred for operating leases was \$30 and \$31 for the years ended December 31, 2018 and 2017, respectively.

At December 31, 2018, the estimated future minimum lease payments under noncancellable operating leases and capital leases were as follows:

	0	perating	Capital
Years ending December 31:			_
2019	\$	28 \$	12
2020		24	11
2021		22	6
2022		19	2
2023		14	2
Thereafter		61	26
Minimum lease payments	\$	168	59
Less amount representing interest			(13)
Net minimum lease payments under capital leases		9	3 46

Note 10. Net Assets with Donor Restrictions

The Clinic receives contributions in support of research, education and clinical activities. Net assets with donor restrictions were available for the following at December 31:

	2018		2017	
Subject to expenditure for specified purpose:				
Research	\$	324 \$	306	
Education		55	44	
Buildings and equipment		81	51	
Charity care		38	35	
Clinical		37	38	
Other		8	16	
Total expenditure for specified purpose		543	490	
Subject to passage of time:				
Pledges and trusts		300	325	
Endowments:				
Perpetual in nature:				
Research		895	805	
Education		256	233	
Charity care		13	15	
Clinical		90	81	
Other		27	31	
Pledges and trusts		329	211	
Buildings and equipment		1		
Total perpetual in nature		1,611	1,376	
Subject to endowment spending policy:				
Research		395	428	
Education		259	272	
Charity care		20	21	
Clinical		59	63	
Other		28	30	
Total subject to endowment spending policy		761	814	
Total endowments		2,372	2,190	
Total net assets with donor restrictions	\$	3,215 \$	3,005	

Note 10. Net Assets with Donor Restrictions (Continued)

Net assets were released from donor restrictions as expenditures were made, which satisfied the following restricted purposes for the years ended December 31:

	2	2017	
Research	\$	181 \$	169
Education		26	22
Buildings and equipment		14	9
Other		39	54
Total net assets released from donor restrictions	\$	260 \$	254

Note 11. Promises to Give

At December 31, outstanding pledges from various corporations, foundations and individuals, included in other receivables and other long-term assets, were as follows:

2018	2017	
	,	
17	0 \$	159
28	3	195
5	0	33
50	3	387
(2	4)	(18)
47	9 \$	369
	17 28 5 50 (2	2018 2017 170 \$ 283 50 503 (24) 479 \$

Estimated cash flows from pledge receivables due after one year are discounted using a risk-adjusted rate, ranging from 1 percent to 6 percent, that is commensurate with the pledges' due dates and established in the year the pledge is received.

The Clinic has received interests in various trusts, primarily split-interest, which are included in other long-term assets. The trusts, which are recorded at fair value based on the underlying value of the assets in the trust or discounted cash flow using a risk-adjusted discount rate of 3.74 percent and 4.31 percent at December 31, 2018 and 2017, respectively. During the years ended December 31, 2018 and 2017, there were no contributions recorded related to the split-interest trusts. The balance of the expected payment streams was \$145 and \$162 at December 31, 2018 and 2017, respectively.

Note 12. Endowment

The Clinic's endowment consists of approximately 2,000 individual funds established for a variety of purposes. The endowment includes both donor-restricted endowment funds and funds designated by the Board of Trustees to function as endowments (board-designated funds). Net assets associated with endowment funds, including funds designated by the Board of Trustees to function as endowments, are classified and reported based on the existence or absence of donor-imposed restrictions. The Board of Trustees retains the right to re-designate board-designated funds.

The Board of Trustees of the Clinic has interpreted the Minnesota State Prudent Management of Institutional Funds Act (SPMIFA) as requiring the preservation of the fair value of the original gift as of the gift date of the donor-restricted endowment funds absent explicit donor stipulations to the contrary. As a result of this interpretation, the Clinic retains in perpetuity: (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the perpetual endowment, and (c) accumulations to the perpetual endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund.

In accordance with SPMIFA, the Clinic considers the following factors in making a determination to appropriate or accumulate donor-restricted funds:

- 1. The duration and preservation of the fund
- 2. The purposes of the Clinic and the donor-restricted endowment fund
- 3. General economic conditions
- 4. The possible effect of inflation and deflation
- 5. The expected total return from income and the appreciation of investments
- 6. Other resources of the Clinic
- 7. The investment policies of the Clinic

The Clinic has adopted investment and spending policies for endowment assets that attempt to provide a predictable stream of funding to programs supported by its endowment while seeking to maintain purchasing power of the endowment assets. Endowment assets include those assets of donor-restricted funds that the Clinic must hold in perpetuity or for a donor-specified period(s), as well as board-designated funds. Under this policy, as approved by the Board of Trustees, the endowment assets are invested in a manner that is intended to produce a real return, net of inflation and investment management costs, of at least five percent over the long term. Actual returns in any given year may vary from this amount.

To satisfy its long-term rate-of-return objectives, the Clinic relies on a total return strategy in which investment returns are achieved through both capital appreciation (realized and unrealized) and current yield (interest and dividends). The Clinic targets a diversified asset allocation that places a greater emphasis on equity-based and alternative investments to achieve its long-term objective within prudent risk constraints.

The Clinic has a policy of appropriating for distribution each year five percent of its endowment fund's moving average fair value over the prior 36 months as of September 30 of the preceding year in which the distribution is planned. In establishing this policy, the Clinic considered the long-term expected return on its endowment. Accordingly, over the long term, the Clinic expects the current spending policy to allow its endowment to grow at an average of the long-term rate of inflation. This is consistent with the Clinic's objective to maintain the purchasing power of the endowment assets held in perpetuity or for a specific term, as well as to provide additional real growth through new gifts and investment return.

Note 12. Endowment (Continued)

At December 31, 2018, the endowment net asset composition by type of fund consisted of the following:

	Withou	t Donor	With Donor	
	Restri	ctions	Restrictions	Total
Donor-restricted funds	\$		\$ 2,372 \$	2,372
Board-designated funds		2,124	_	2,124
Total funds	\$	2,124	\$ 2,372 \$	4,496

Changes in endowment net assets for the year ended December 31, 2018 consisted of the following:

	With	out Donor	With Donor	
	Res	strictions	Restrictions	Total
Endowment net assets, beginning of year	\$	2,121	\$ 2,190 \$	4,311
Investment return:				
Investment income		35	30	65
Net appreciation (realized and unrealized)		6	4	10
Total investment return		41	34	75
Contributions		_	235	235
Appropriation of endowment assets for expenditure		(60)	(87)	(147)
Other changes:				
Transfers to create board-designated				
endowment funds		22	_	22
Endowment net assets, end of year	\$	2,124	\$ 2,372 \$	4,496

Note 12. Endowment (Continued)

At December 31, 2017, the endowment net asset composition by type of fund consisted of the following:

	Withou	ıt Donor	With Donor	
	Restr	ictions	Restrictions	Total
Donor-restricted funds	\$	_	\$ 2,190 \$	2,190
Board-designated funds		2,121	_	2,121
Total funds	\$	2,121	\$ 2,190 \$	4,311

Changes in endowment net assets for the year ended December 31, 2017 consisted of the following:

	With	out Donor W	ith Donor	
	Res	strictions Re	estrictions	Total
Endowment net assets, beginning of year	\$	1,804 \$	1,913 \$	3,717
Investment return:				
Investment income		31	26	57
Net appreciation (realized and unrealized)		261	224	485
Total investment return		292	250	542
Contributions			108	108
Appropriation of endowment assets for expenditure		(101)	(81)	(182)
Other changes:				
Transfers to create board-designated				
endowment funds		126		126
Endowment net assets, end of year	\$	2,121 \$	2,190 \$	4,311

Note 13. Board-Designated Funds

Board-designated funds are subject to expenditure for the following purpose for the years ended December 31:

	 2018	2017
Research	\$ 1,073 \$	1,060
Education	160	190
Buildings and equipment	3	3
Charity care	9	9
Clinical	114	110
Other	894	871
Total designation for specified purpose	\$ 2,253 \$	2,243

Note 14. Functional Expenses

The consolidated financial statements present certain expenses that are attributed to more than one program or supporting function. Therefore, expenses require allocation on a reasonable basis that is consistently applied. Benefits and payroll taxes are allocated based on factors of either salary expense or hours worked. Overhead costs that include things such as professional services, office expenses, information technology, interest, insurance, and other similar expenses are allocated on a variety of factors including revenues, hours worked, and salary expense. Costs related to space include occupancy, depreciation and amortization, and property taxes are allocated on a square footage basis.

The expenses reported in the consolidated statements of activities for the years ended December 31, 2018 and 2017, supported the following programs and functions:

		2018												
	Pa	atient care		Lab and echnology ventures		Research		raduate and other education		General and dministrative		evelopment expenses	Other activities	Total expenses
Salaries and benefits	\$	5,884	\$	173	\$	521	\$	265	\$	158	\$	3	\$ 170	\$ 7,174
Supplies and services		2,455		848		217		64		134		15	34	3,767
Facilities		656		14		71		20		69		2	4	836
Finance & investment		30		1		1		1		2		_	85	120
Total	\$	9,025	\$	1,036	\$	810	\$	350	\$	363	\$	20	\$ 293	\$ 11,897

		2017													
	Pa	atient care	t	Lab and echnology ventures		Research		raduate and other education		General and dministrative		evelopment expenses	Other activities	,	Total expenses
Salaries and benefits	\$	5,554	\$	167	\$	480	\$	244	\$	120	\$	7	\$ 224	\$	6,796
Supplies and services		2,258		933		202		60		100		16	21		3,590
Facilities		619		15		67		18		56		1	2		778
Finance & investment		18		1				1		2			91		113
Total	\$	8,449	\$	1,116	\$	749	\$	323	\$	278	\$	24	\$ 338	\$	11,277

Note 15. Employee Benefit Programs

The Clinic serves as plan sponsor for several defined benefit pension funds and other postretirement benefits.

Included in other changes in unrestricted net assets at December 31, 2018 and 2017, are the following amounts, respectively, that have not yet been recognized in net periodic cost: unrecognized actuarial losses of \$3,435 and \$4,137 and unrecognized prior service benefit of \$298 and \$382. Actuarial losses are amortized as a component of net periodic pension cost, only if the losses exceed ten percent of the greater of the projected benefit obligation or the fair value of plan assets. Unrecognized prior service benefits are amortized on a straight-line basis over the estimated life of plan participants. The unrecognized actuarial losses and prior service benefit included in net assets are expected to be recognized in net periodic pension cost during the year ending December 31, 2019, in the amount of \$152 and \$69, respectively.

Changes in plan assets and benefit obligations recognized in unrestricted net assets during 2018 and 2017 included the following:

		2018	2017
	_		
Current-year actuarial gain (loss)	\$	469 \$	(638)
Amortization of actuarial loss		228	170
Current-year prior service cost		_	
Amortization of prior service credit		(85)	(97)
Pension and other postretirement benefit adjustments	\$	612 \$	(565)

Pension plans:

Obligations and funded status: The following is a summary of the changes in the benefit obligation and plan assets, the resulting funded status of the qualified and nonqualified pension plans, and accumulated benefit obligation as of and for the years ended December 31:

	20		2017
Change in projected benefit obligation:			
Benefit obligation, beginning of year	\$	9,647 \$	8,316
Service cost		509	425
Interest cost		353	350
Actuarial (gain) loss		(1,100)	1,027
Benefits paid		(543)	(471)
Estimated benefit obligation at end of year	\$	8,866 \$	9,647
Change in plan assets:			
Fair value of plan assets, beginning of year	\$	8,372 \$	7,260
Actual return on plan assets		(84)	1,048
Employer contributions		339	535
Benefits paid		(543)	(471)
Fair value of plan assets at end of year	\$	8,084 \$	8,372

Note 15. Employee Benefit Programs (Continued)

	2018	2017
Funded status of the plan	\$ (782) \$	(1,275)
Accumulated benefit obligation	\$ 8,551 \$	9,360

Amounts recognized in the consolidated statements of financial position consist of the following at December 31:

	 2018	2017
Noncurrent liabilities	\$ (782) \$	(1,275)
Net amount recognized	\$ (782) \$	(1,275)

Components of net periodic benefit cost are as follows at December 31:

	201	8	2017		
Service cost	\$	509 \$	425		
Interest cost		352	350		
Expected return on plan assets		(624)	(573)		
Amortization of unrecognized:					
Prior service benefit		(50)	(50)		
Net actuarial loss		207	157		
Net periodic benefit cost	\$	394 \$	309		

Plan assets: The largest of the pension funds is the Mayo Clinic Master Retirement Trust Plan, which holds \$7,984 of the \$8,084 in combined plan assets at December 31, 2018, and \$8,260 of the \$8,372 in combined plan assets at December 31, 2017. The investment policies described below apply to the Mayo Clinic Master Retirement Trust Plan (the Plan).

The Plan employs a global, multi-asset approach in managing its retirement plan assets. This approach is designed to maximize risk-adjusted returns over a long-term investment horizon, consistent with the nature of the pension liabilities being funded. The plan asset portfolio's target allocation for total return investment strategies, which include public equities, private equities, absolute return, and real assets, is 82.5 percent. The portfolio's target fixed-income exposure is 17.5 percent. The fixed-income exposure may include the use of long-term interest rate swap contracts structured to increase the portfolio's interest rate sensitivity and thereby provide a hedge of the plan liabilities resulting from falling long-term interest rates. Investments in private equities, real assets, and absolute return strategies are held to improve diversification and thereby enhance long-term, risk-adjusted returns. However, recognizing that these investments are not as liquid as publicly traded stocks and bonds, portfolio investment policies limit overall exposure to these assets. The portfolio's allocation to private equities and real assets is limited to a maximum of 30 percent (with a target allocation of 22.5 percent), and exposure to absolute return strategies is limited to a maximum of 35 percent (with a target of 27.5 percent). The Clinic reviews performance, asset allocation, and risk management reports for plan asset portfolios on a monthly basis.

Note 15. Employee Benefit Programs (Continued)

The fair values of the Plan's assets at December 31, 2018, by asset category are as follows:

	Quoted Pric	es					
	in Active		Significant	Significant			
	Markets fo	r	Observable	Unobservab	le		
	Identical Ass	ets	Inputs	Inputs			
Assets	(Level 1)		(Level 2)	(Level 3)		NAV	Total
Cash and equivalents	\$	355	\$ 38	\$	_ \$	S —	\$ 693
Fixed-income securities:							
U.S. government		_	58		_	_	58
U.S. government agencies		_	169		_	_	169
U.S. corporate		_	316		6	_	322
Foreign		_	21		_	_	21
Common and preferred stocks:							
U.S.	(606	38		3	_	647
Foreign	4	135	_		_	_	435
Funds:							
Fixed-income		92	_		_	_	92
Equities		56	464		_	_	520
Foreign		66	_		_	_	66
Investments at NAV		_			_	4,961	4,961
Total investments	\$ 1,9	910	\$ 1,104	\$	9 \$	4,961	\$ 7,984

The fair values of the Plan's assets at December 31, 2017, by asset category are as follows:

Assets	ir Ma Ident	ted Prices Active Arkets for ical Assets Level 1)	Significant Observable Inputs (Level 2)	Und	ignificant observable Inputs Level 3)	NAV	Total
		,	,		,		
Cash and equivalents	\$	752	\$ 23	\$	— \$	— \$	775
Fixed-income securities:							
U.S. government		_	67		_	_	67
U.S. government agencies		_	138		_	_	138
U.S. corporate		_	358		_	_	358
Foreign		_	25		_	_	25
Common and preferred stocks:							
U.S.		650	30		_	_	680
Foreign		477	_		_	_	477
Funds:							
Fixed-income		343	_		_	_	343
Equities		156	518		_	_	674
Investments at NAV		_	_		_	4,723	4,723
Total investments	\$	2,378	\$ 1,159	\$	— \$	4,723 \$	8,260

Note 15. Employee Benefit Programs (Continued)

The following is a description of the Plan's valuation methodologies for assets and liabilities measured at fair value. Fair value for Level 1 is based upon quoted market prices. Fair value for Level 2 is based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market or can be corroborated by observable market data for substantially the full term of the assets. Inputs are obtained from various sources, including market participants, dealers and brokers.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The Clinic's policy is to recognize transfers in and transfers out as of the actual date of the event or change in circumstances that caused the transfer. There were no significant transfers in 2018 or 2017.

The methods described above and those recorded at NAV may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

The following information pertains to those alternative investments recorded at NAV in accordance with the *Fair Value Measurements and Disclosures* topic of the FASB ASC 820.

At December 31, 2018, alternative investments recorded at NAV consisted of the following:

				Redemption	Redemption
	Fair	U	Infunded	Frequency (If	Notice
	 Value	Commitment		Currently Eligible)	Period
Absolute return/hedge funds (a) Private partnerships (b)	\$ 2,699 2,262	\$	— 1,153	Monthly to annually	30–90 days
	\$ 4,961	\$	1,153		

At December 31, 2017, alternative investments recorded at NAV consisted of the following:

				Redemption	Redemption
	Fair	U	Infunded	Frequency (If	Notice
	 Value	Со	mmitment	Currently Eligible)	Period
Absolute return/hedge funds (a) Private partnerships (b)	\$ 2,791 1.932	\$	— 1,047	Monthly to annually	30–90 days
i iivate partiferships (b)	\$ 4,723	\$	1,047		

(a) This category includes investments in absolute return/hedge funds, which are actively managed commingled investment vehicles that derive the majority of their returns from factors other than the directional flow of the markets in which they invest. Representative strategies include high-yield credit, distressed debt, merger arbitrage, relative value, and long-short equity strategies. The fair values of the investments in this category have been estimated using the NAV per share of the investments. Investments in this category generally carry "lockup" restrictions that do not allow investors to seek redemption in the first year after acquisition. Following the initial lockup period,

Note 15. Employee Benefit Programs (Continued)

- liquidity is generally available monthly, quarterly or annually following a redemption request. Over 90 percent of the investments in this category have at least annual liquidity.
- (b) This category includes limited partnership interests in closed-end funds that focus on venture capital, private equity, real estate and resource-related strategies. The fair values of the investments in this category have been estimated using the NAV of the Plan's ownership interest in partners' capital. These investments cannot be redeemed with the funds. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is estimated that the underlying assets of most funds will generally be liquidated over a seven- to ten-year period.

No plan assets are expected to be returned to the employer during 2019.

Other postretirement benefits:

Obligations and funded status: A summary of the changes in the benefit obligation and plan assets and the resulting funded status of the other postretirement plans is as follows as of and for the years ended December 31:

	2018	2017
Change in projected benefit obligation:		
Benefit obligation at beginning of year	\$ 1,095 \$	1,005
Service cost	11	11
Interest cost	39	42
Plan participants' contributions	31	26
Amendments	_	_
Medicare subsidy	3	3
Actuarial (gain) loss	(83)	90
Benefits paid	(88)	(82)
Estimated benefit obligation at end of year	\$ 1,008 \$	1,095
Change in plan assets:		
Fair value of plan assets at beginning of year	\$ — \$	_
Employer contributions	54	53
Plan participants' contributions	31	26
Medicare subsidy	3	3
Benefits paid	(88)	(82)
Fair value of plan assets at end of year	\$ — \$	_
Funded status of the plan	\$ (1,008) \$	(1,095)

Amounts recognized in the consolidated statements of financial position for postretirement benefits consist of the following at December 31:

		2018	2017
Current liabilities	\$	(40) \$	(46)
Noncurrent liabilities	Φ	(968)	(1,049)
Net amount recognized	\$	(1,008) \$	(1,095)
· ·			

Notes to Consolidated Financial Statements (In Millions)

Note 15. Employee Benefit Programs (Continued)

Components of net periodic benefit cost for other postretirement benefits are as follows for the years ended December 31:

	2018		2017
Service cost	\$	11 \$	11
Interest cost	Ψ	39	42
Amortization of:			
Unrecognized prior service benefit		(34)	(47)
Unrecognized net actuarial loss		21	13
Net periodic benefit cost for other postretirement benefits	\$	37 \$	19

The Clinic has concluded that the prescription drug benefits under its defined benefit postretirement plan are actuarially equivalent to Medicare Part D under the Medicare Modernization Act (the Act) and that the Clinic will receive the subsidy available under the Act.

The following reflects the expected future Medicare Part D subsidy receipts:

Years	ending	December	31.
ıcaıs	CHUILIN	December	JI.

2019	\$ 4
2020	5
2021	5
2022	5
2023	5
2024–2027	26

Plan trend rates are the annual rates of increase expected for the benefits payable from the plan; these rates include Health Care Cost Trend plus the leveraging effect of plan design. The assumed plan trend rate is 5.50 percent. A one-percentage-point change in the assumed health care cost trend rate would have the following effects:

	One-Percentage- One-Percer			ercentage-	
	Point Increase		Point	Point Decrease	
Effect on total service and interest cost components in 2018	\$	2	\$	(2)	
Effect on postretirement benefit obligation at December 31, 2018		49		(42)	

Pension and postretirement benefits:

Assumptions: Weighted-average assumptions used to determine pension and postretirement benefit obligations at the measurement date are as follows:

	Pension	Benefits	Postretirement Benefits	
	2018 2017		2018	2017
Discount rate	4.33%	3.74%	4.35%	3.72%
Rate of compensation increase	3.53%	3.39%	N/A	N/A

Notes to Consolidated Financial Statements (In Millions)

Note 15. Employee Benefit Programs (Continued)

Weighted-average assumptions used to determine net periodic pension and postretirement benefit cost are as follows:

	Pension	Benefits	Postretirement Benefits	
	2018 2017		2018	2017
Discount rate	3.74%	4.31%	3.72%	4.24%
Expected long-term return on plan assets	7.50%	7.50%	N/A	N/A
Rate of compensation increase	3.39%	3.36%	N/A	N/A

The Clinic utilizes a building block approach in determining the expected long-term rate of return for its plan assets. First, historical data on individual asset class returns are studied. Next, the historical correlation among and between asset class returns is studied under both normal conditions and in times of market turbulence. Then, various mixes of asset classes are considered under multiple long-term investment scenarios. Finally, after considering liquidity concerns related to the use of certain alternative asset classes, the plan sponsor selects the portfolio blend that it believes will produce the highest expected long-term return on a risk-adjusted basis.

Cash flows:

Contributions: The Clinic expects to contribute \$344 to its pension plans in 2019.

Estimated future benefit payments: The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid:

	Pension	Pos	stretirement
	Benefits		Benefits
Years ending December 31:			
2019	\$ 445	\$	42
2020	436		50
2021	457		52
2022	478		55
2023	490		57
2024–2027	2,682		309

In addition to the defined benefit plans, the Clinic sponsors various defined contribution benefit plans. Expense recognized by the Clinic for those plans was \$105 and \$99 for 2018 and 2017, respectively.

Note 16. General and Professional Liability Insurance

The Clinic insures substantially all general and professional liability risks through a combination of a wholly owned captive insurance company and self-insurance. The insurance program combines various levels of self-insured retention with excess commercial insurance coverage. Actuarial consultants have been retained to assist in the estimation of outstanding general and professional liability losses.

The Clinic's general and professional liability as reported in the accompanying consolidated statements of financial position was \$101 and \$88 at December 31, 2018 and 2017, respectively. Provisions for the general and professional liability risks are based on an actuarial estimate of losses using the Clinic's actual loss data adjusted for industry trends and current conditions and considering an evaluation of claims by the Clinic's legal counsel. The provision includes estimates of ultimate costs for both reported claims and claims incurred but not reported.

Activity in the liability is summarized as follows for the years ended December 31:

	2	2018	2017
Balance, beginning of year	\$	88 \$	81
Incurred related to captive insurance company liability:			
Current year		19	19
Prior years		12	2
Total incurred		31	21
Paid related to captive insurance company liability:			
Current year		(3)	(1)
Prior years		(15)	(15)
Total paid		(18)	(16)
Net change in self-insurance liability		_	2
Balance, end of year	\$	101 \$	88

Note 17. Other Receivables, Other Current and Long-Term Assets, and Other Current and Long-Term Liabilities

At December 31, other receivables consisted of the following:

At December 31, other receivables consisted of the following:			
	 2018	2017	
Pledges receivable	\$ 170	\$	159
Grants receivable	89		82
Other	119		107
Total other receivables	\$ 378	\$	348
At December 31, other current assets consisted of the following:			
	2018	2017	
Inventories	\$ 130	\$	123
Prepaid expenses	51		64
Other	6		41
Total other current assets	\$ 187	\$	228
At December 31, other long-term assets consisted of the following:			
	 2018	2017	
Pledges receivable	\$ 309	\$	210
Trust receivables	145		162
Oil and gas interests	81		64
Technology-based ventures	32		19
Long-term portion of deferred tax asset	26		29
Other	 102		94
Total other long-term assets	\$ 695	\$	578
At December 31, other current liabilities consisted of the following:			
	 2018	2017	
Other taxes	\$ 81	\$	73

2	018	2017
\$	81 \$	73
	35	30
	32	32
	28	28
	25	26
	17	16
	10	8
	9	21
	100	106
\$	337 \$	340
	\$	35 32 28 25 17 10 9

Note 17. Other Receivables, Other Current and Long-Term Assets, and Other Current and Long-Term Liabilities (Continued)

At December 31, other long-term liabilities consisted of the following:

	 2018	2017	
Deferred compensation	\$ 586 \$	586	
Long-term disability	160	160	
Electronic medical record	114	87	
Professional and general liability	73	60	
Gift annuities	71	49	
Trust obligations	54	46	
Financing obligation	39	_	
Retirement community obligations	37	35	
Lease agreement liability	36	40	
Workers' compensation liability	25	27	
Asset retirement obligation	23	23	
Release of third-party from affiliation	22	_	
Contract deposit	22	22	
Other	 61	66	
Total other long-term liabilities	\$ 1,323 \$	1,201	

Note 18. Other Revenue

For the years ended December 31, other revenue consisted of the following:

	 2018	2017
Retail pharmacy sales	\$ 330 \$	301
Royalties	97	95
Technology commercialization, health information and medical products	78	54
Retail stores	44	46
Graduate medical and other education revenue	38	38
Cafeteria revenue	35	35
Oil- and gas-producing activities	28	18
Premium revenue	27	153
Other	172	279
Total other revenue	\$ 849 \$	1,019

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Notes to Consolidated Financial Statements (In Millions)

Note 19. Commitments and Contingencies

The Clinic has various construction projects in progress related to patient care, research, and educational facilities. The estimated costs committed to complete the various projects at December 31, 2018, approximated \$1,492, all of which is expected to be expended over the next three to five years.

While the Clinic is self-insured for a substantial portion of its general and workers' compensation liabilities, the Clinic maintains commercial insurance coverage against catastrophic loss. Additionally, the Clinic maintains a self-insurance program for its long-term disability coverage. The provision for estimated self-insured claims includes estimates of the ultimate costs for both reported claims and claims incurred but not reported.

The Clinic is a defendant in various lawsuits arising in the ordinary course of business and records an estimated liability for probable claims. Although the outcome of these lawsuits cannot be predicted with certainty, management believes the ultimate disposition of such matters will not have a material effect on the Clinic's consolidated financial position or statement of activities.

Note 20. Disposal of Affiliates

On May 1, 2017, the Clinic withdrew as the sole member of Mayo Clinic Health System - Waycross in a transaction with the Hospital Authority of Ware County and HCA Management Services, L.P. A \$13 loss from disposal of affiliate is included in noncurrent and other items of the consolidated statements of activities for the year ended December 31, 2017.

In August 2017, the Clinic entered into an agreement with Medica, a Minnesota-based health services company, to sell its ownership interest in Mayo Clinic Health Solutions (MMSI). For the year ended December 31, 2017, a \$34 gain from disposal of affiliate is included in noncurrent and other items of the consolidated statements of activities.

On September 30, 2018, the Clinic released a third-party from the affiliation with a consolidated affiliate. At December 31, 2018, the Clinic recorded a \$37 liability from release of the third party. This relates to a previously disclosed contingency regarding the involvement of a third party in the operations of the consolidated affiliate.

Supplementary Information



Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER			· ·	,
DEPARTMENT OF AGRICULTURE				
PASS-THROUGH AWARD				
Agriculture Research Basic and Applied Research				
CRDF Global				
Agriculture Research Basic and Applied Research	10.001	DAA3-18-64067	\$ 5,453	\$ -
Subtotal Direct Award		2.2.0 .0 0.00.	5,453	_
Total Department of Agriculture			5,453	_
DEPARTMENT OF DEFENSE				
DIRECT AWARDS				
National Security Agency				
Contract	12.RD	N66001-12-D-0088	385,735	
U.S. Army Medical Research and Medical Command	IZ.ND	1100001-12-D-0000	303,733	_
Military Medical Research and Development (12.420)	40.400	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	444 570	
Military Medical Research and Development	12.420	W81XWH-15-1-0115	111,576	-
Military Medical Research and Development	12.420	W81XWH-15-1-0213	408,928	_
Military Medical Research and Development	12.420	W81XWH-15-1-0257	434,072	-
Military Medical Research and Development	12.420	W81XWH-15-1-0286	362,848	10,648
Military Medical Research and Development	12.420	W81XWH-15-1-0292	441,400	3,800
Military Medical Research and Development	12.420	W81XWH-15-1-0293	619,666	35,801
Military Medical Research and Development	12.420	W81XWH-15-1-0341	108,056	-
Military Medical Research and Development	12.420	W81XWH-15-1-0347	165,971	-
Military Medical Research and Development	12.420	W81XWH-15-1-0484	397,230	205,004
Military Medical Research and Development	12.420	W81XWH-15-1-0634	124,948	
Military Medical Research and Development	12.420	W81XWH-15-2-0071	923,753	729,393
Military Medical Research and Development	12.420	W81XWH-16-1-0189	108,317	-
Military Medical Research and Development	12.420	W81XWH-16-1-0265	694,851	_
Military Medical Research and Development	12.420	W81XWH-16-1-0266	120,625	-
Military Medical Research and Development	12.420	W81XWH-16-1-0268	283,406	-
Military Medical Research and Development	12.420	W81XWH-16-1-0269	271,737	-
Military Medical Research and Development	12.420	W81XWH-16-1-0391	99,510	-
Military Medical Research and Development	12.420	W81XWH-16-1-0540	989,595	-
Military Medical Research and Development	12.420	W81XWH-16-1-0668	549,299	-
Military Medical Research and Development	12.420	W81XWH-16-2-0030	329,913	-
Military Medical Research and Development	12.420	W81XWH-17-1-0248	303,834	-
Military Medical Research and Development	12.420	W81XWH-17-1-0249	143,997	-
Military Medical Research and Development	12.420	W81XWH-17-1-0498	211,064	-
Military Medical Research and Development	12.420	W81XWH-17-1-0546	330,909	-
Military Medical Research and Development	12.420	W81XWH-18-1-0074	22,683	_
Military Medical Research and Development	12.420	W81XWH-18-1-0218	189,839	-
Military Medical Research and Development	12.420	W81XWH-18-1-0292	43,960	_
Military Medical Research and Development	12.420	W81XWH-18-1-0297	65,248	-
Military Medical Research and Development	12.420	W81XWH-18-1-0345	48,363	_
Military Medical Research and Development	12.420	W81XWH-18-1-0504	25,294	_
Military Medical Research and Development	12.420	W81XWH-18-1-0676	16,941	



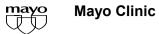
	CFDA	Federal/Pass-Through	Federal	Pass-Through
Federal Agency/Pass-Through Entity/CFDA or Project Description	Number	Award Number	Expenditures	to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF DEFENSE (continued)				
DIRECT AWARDS (continued)				
U.S. Army Medical Research and Medical Command (continued)				
Military Medical Research and Development (12.420) (continued)	40.400	\\\(\O4\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ф 44.0F0	•
Military Medical Research and Development	12.420	W81XWH-18-1-0760	\$ 14,353	
Contract	12.RD	SPPDG-13-D-0123	1,531,074	87,650
Contract	12.RD	SPPDG-10-D-0043	1,062,697	_
Contract	12.RD	SPPDG-18-D-0024	2,093,797	-
Department of the Navy, Office of the Chief of Naval Research				
Basic and Applied Scientific Research (12.300)				
Basic and Applied Scientific Research	12.300	N00014-16-1-3173	250,618	-
Basic and Applied Scientific Research	12.300	N00014-18-D-7001	2,260,061	_
Contract	12.RD	N00014-18-C-2016	153,037	_
U.S. Army Materiel Command				
Basic Scientific Research (12.431)				
Basic Scientific Research	12.431	W911NF-16-1-264	127,365	
Subtotal Direct Awards			16,826,570	1,072,296
PASS-THROUGH AWARDS				
Applied Research Associates, Inc.				
Contract	12.RD	W81XWH-15-9-0001	57,769	_
Arizona State University				
Research and Technology Development	12.910	N66001-17-2-4018	5,054	_
Brigham and Women's Hospital				
Military Medical Research and Development	12.420	W81XWH-15-1-0269	37,608	_
ContraFect Corporation				
Military Medical Research and Development	12.420	W81XWH-16-1-0245	34,363	_
Duke University				
Military Medical Research and Development	12.420	W81XWH-14-1-0473	2,140	_
North Carolina State University				
Contract	12.RD	H98230-13-D0054	190,232	_
Northern California Institute for Research and Education				
Military Medical Research and Development	12.420	W81XWH-13-1-0259	70,480	-
Military Medical Research and Development	12.420	W81XWH-14-1-0462	8,473	_
Military Medical Research and Development	12.420	WEI1872	28	_
NYU School of Medicine				
Military Medical Research and Development	12.420	W81XWH-16-1-0797	28,973	_
University of Alabama at Birmingham				
Military Medical Research and Development	12.420	W81XWH-15-1-0705	27,131	-
Military Medical Research and Development	12.420	W81XWH-17-2-0037	6,552	-
University of Delaware				
Military Medical Research and Development	12.420	W81XWH-14-1-0563	5,671	_
University of Minnesota	40 :			
Military Medical Research and Development	12.420	W81XWH-17-1-0445	1,951	-



Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)			·	•
DEPARTMENT OF DEFENSE (continued)				
PASS-THROUGH AWARDS (continued)				
University of Pennsylvania				
Research and Technology Development	12.910	N66001-14-2-4-31	\$ 109,596	\$ -
University of Pittsburgh				
Military Medical Research and Development	12.420	W81XWH-17-2-0073	22,907	-
The Geneva Foundation				
Contract	12.RD	W81XWH-17-C-0253	180,233	70,000
Contract	12.RD	W81XWH-17-C-0029	39,800	_
University of WI, Madison				
Research and Technology Development	12.910	N66001-17-2-4010	598,830	-
Vanderbilt University Medical Center				
Military Medical Research and Development	12.420	W81XWH-15-2-0068	167,097	_
Military Medical Research and Development	12.420	W81XWH-15-1-0110	41,732	_
Vivonics, Inc.				
Contract	12.RD	W81XWH-14-C-0009	29,206	-
Wake Forest				
Military Medical Research and Development	12.420	W81XWH-14-2-0003	127,717	_
Wyle Laboratories, Inc.				
US Air Force	12.RD	FA8650-12-D-6280	140,990	_
Subtotal Pass-Through Awards			1,934,533	70,000
Total Department of Defense			18,761,103	1,142,296
DEPARTMENT OF JUSTICE PASS-THROUGH AWARD Lincoln Memorial University				
National Institute of Justice Research, Evaluation, and Development	16.560	LMU #1	27.066	
Project Grants	10.500	LIVIU #1	27,966	
Subtotal Pass-Through Award			27,966	
Total Department of Justice			27,966	
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DIRECT AWARD				
NASA Shared Services Center				
Exploration (43.003)				
Exploration	43.003	NNX16AK50G	61,323	
Subtotal Direct Award			61,323	
Total National Aeronautics and Space Administration			61,323	_
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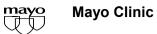
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				то солитостристи
NATIONAL SCIENCE FOUNDATION				
DIRECT AWARDS				
Engineering Grants (47.041)				
Engineering Grants	47.041	NSF-GRFP18	\$ 19,820	\$ -
Computer and Information Science and Engineering (47.070)			,	
Computer and Information Science and Engineering	47.070	NSF1744098	79,994	2,039
Computer and Information Science and Engineering	47.070	NSF1522106	63,756	, -
Computer and Information Science and Engineering	47.070	NSF1602198	64,101	_
Computer and Information Science and Engineering	47.070	NSF1624615	162,446	_
Computer and Information Science and Engineering	47.070	NSF1837572	31,278	_
Subtotal Direct Awards			421,395	2,039
PASS-THROUGH AWARDS				
Arizona State University				
Geosciences	47.050	NSF1719325	13,126	_
Harvard University				
Engineering Grants	47.041	NSF #CMMI-1562645	7,511	_
Medicool Technologies Inc.				
Engineering Grants	47.041	NSF #8	33,015	_
Michigan Technological University				
Engineering Grants	47.041	CBET-1350154	50,531	_
University of Michigan				
Engineering Grants	47.041	NSF1462060	6,240	_
Subtotal Pass-Through Awards			110,423	_
Total National Science Foundation			531,818	2,039
DEPARTMENT OF VETERANS AFFAIRS				
DIRECT AWARD				
Network Contracting Office				
Research and Development (64.054)				
Research and Development	64.054	36C25019P0068	3,781	
Subtotal Direct Award			3,781	_
Total Department of Veterans Affairs			3,781	
DEPARTMENT OF HEALTH AND HUMAN SERVICES				
DIRECT AWARDS				
Administration for Community Living				
ACL National Institute on Disability, Independent Living,				
and Rehabilitation Research (93.433)				
ACL National Institute on Disability, Independent Living,	02.422	111224120026	100.010	
and Rehabilitation Research	93.433	H133A120026	129,919	-
ACL National Institute on Disability, Independent Living,	02 422	00DDTD0040 04 00	JEE 634	
and Rehabilitation Research	93.433	90DPTB0012-01-00	265,634	_
ACL National Institute on Disability, Independent Living,	02 422	000000000000000	110 110	
and Rehabilitation Research	93.433	90DPTB0012-02-00	110,413	_



ederal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
Agency for Healthcare Research and Quality				
Research on Healthcare Costs, Quality and Outcomes (93.226)				
Research on Healthcare Costs, Quality and Outcomes	93.226	HS25402	\$ 412,149	\$ 22,920
Research on Healthcare Costs, Quality and Outcomes	93.226	HS25517	66,740	3,768
Research on Healthcare Costs, Quality and Outcomes	93.226	HS25876	28,163	-
Research on Healthcare Costs, Quality and Outcomes	93.226	HS26609	25,941	-
Research on Healthcare Costs, Quality and Outcomes	93.226	AHRQ-CEPI-2018	33,810	-
Research on Healthcare Costs, Quality and Outcomes	93.226	AHRQ 16	9,081	-
Centers for Disease Control and Prevention				
Public Health Emergency Preparedness (93.069)				
Public Health Emergency Preparedness	93.069	47383	161,763	_
Public Health Emergency Preparedness	93.069	U3REP150527	51,838	-
Project Grants and Cooperative Agreements for				
Tuberculosis Control Programs (93.116)				
Project Grants and Cooperative Agreements for				
Tuberculosis Control Programs	93.116	PS04096	89,698	-
Centers for Medicare and Medicaid Services				
ACA-Transforming Clinical Practice Initiative: Practice				
Transformation Networks (PTNs)	93.638	CMS331449	2,823,809	50,000
Food and Drug Administration				
Food and Drug Administration Research (93.103)				
Food and Drug Administration Research	93.103	FD004781	29,927	_
Food and Drug Administration Research	93.103	FD04789	1,621	-
National Institutes of Health				
Environmental Health (93.113)				
Environmental Health	93.113	ES24414	30,952	-
Oral Diseases and Disorders Research (93.121)				
Oral Diseases and Disorders Research	93.121	DE14036	41,333	_
Oral Diseases and Disorders Research	93.121	DE25689	185,694	_
Human Genome Research (93.172)				
Human Genome Research	93.172	HG06379	973,396	42,727
Human Genome Research	93.172	HG06431	203,889	-
Human Genome Research	93.172	HG09542	119,619	-
Research Related to Deafness and Communication Disorders				
(93.173)				
Research Related to Deafness and Communication Disorders	93.173	DC12519	307,346	_
Research Related to Deafness and Communication Disorders	93.173	DC14942	406,735	_
National Center on Sleep Disorders Research (93.233)				
National Center on Sleep Disorders Research	93.233	HL96750	244,791	_
National Center on Sleep Disorders Research	93.233	HL114024	5,788	-
National Center on Sleep Disorders Research	93.233	HL134808	790,381	-
National Center on Sleep Disorders Research	93.233	HL134885	591,772	-
National Center on Sleep Disorders Research	93.233	HL65176	427,548	-



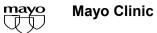
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SEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Mental Health Research Grants (93.242)				
Mental Health Research Grants	93.242	MH100468	\$ 135,313	\$ -
Mental Health Research Grants	93.242	MH100266	37,325	21,600
Mental Health Research Grants	93.242	MH113700	348,063	46,781
Mental Health Research Grants	93.242	MH114899	44,819	-
Mental Health Research Grants	93.242	MH93522	4,762	-
Alcohol Research Programs (93.273)				
Alcohol Research Programs	93.273	AA18779	369,707	-
Alcohol Research Programs	93.273	AA21171	446,628	-
Alcohol Research Programs	93.273	AA21788	289,423	-
Alcohol Research Programs	93.273	AA25214	124,485	-
Alcohol Research Programs	93.273	AA26886	9,338	-
Alcohol Research Programs	93.273	AA26887	19,334	-
Alcohol Research Programs	93.273	AA26974	66,437	-
Alcohol Research Programs	93.273	AA27179	57,044	-
Alcohol Research Programs	93.273	AA27486	14,977	
Drug Abuse and Addiction Research Programs (93.279)				
Drug Abuse and Addiction Research Programs	93.279	DA42492	1,060,485	-
Drug Abuse and Addiction Research Programs	93.279	DA37299	165,645	-
Drug Abuse and Addiction Research Programs	93.279	DA46008	78,748	16,50
Discovery and Applied Research for Technological Innovations				
to Improve Human Health (93.286)				
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB001981	351,164	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB16966	800,206	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB17185	144,689	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB17197	183,259	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB17213	379,496	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB17095	155,408	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB19403	270,309	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB19947	220,181	-
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB18965	383,237	97,709
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB21148	77,971	_



Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)	Trainis or	, mai a manibor	<u> </u>	to Gabroolpionto
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB22183	\$ 156,850	\$ -
Discovery and Applied Research for Technological Innovations to			*,	•
Improve Human Health (continued)				
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB23113	174,956	63,323
Discovery and Applied Research for Technological			,	
Innovations to Improve Human Health	93.286	EB23723	34,808	_
Discovery and Applied Research for Technological			•	
Innovations to Improve Human Health	93.286	EB24071	158,725	_
Discovery and Applied Research for Technological			,	
Innovations to Improve Human Health	93.286	EB24403	209,898	_
Discovery and Applied Research for Technological			•	
Innovations to Improve Human Health	93.286	EB24450	1,129,499	532,058
Small Rural Hospital Improvement Grant Program (93.301)				,
Small Rural Hospital Improvement Grant Program	93.301	DHS APCTG	16,011	_
Minority Health and Health Disparities Research (93.307)				
Minority Health and Health Disparities Research	93.307	MD08934	340,248	209,083
Minority Health and Health Disparities Research	93.307	MD09682	678,705	53,124
Minority Health and Health Disparities Research	93.307	MG08934	6,237	, _
Trans-NIH Research Support (93.310)			•	
Trans-NIH Research Support	93.310	AI142773	36,010	_
Trans-NIH Research Support	93.310	OD23121	18,496,353	_
Trans-NIH Research Support	93.310	DK100469	1,103,812	_
Trans-NIH Research Support	93.310	DK112326	703,467	_
Trans-NIH Research Support	93.310	CA195764	1,366,561	_
Trans-NIH Research Support	93.310	HG09450	452,045	_
Trans-NIH Research Support	93.310	TR00884	707,151	_
Trans-NIH Research Support	93.310	TR00954	52,603	_
Trans-NIH Research Support	93.310	TR02471	118,972	_
National Center for Advancing Translational Sciences (93.350)				
National Center for Advancing Translational Sciences	93.350	TR002377	12,314,953	_
National Center for Advancing Translational Sciences	93.350	TR002379	1,437,263	5,000
National Center for Advancing Translational Sciences	93.350	TR02062	980,805	651,431
National Center for Advancing Translational Sciences	93.350	TR02380	732,365	_
21st Century Cures Act-Beau Biden Cancer Moonshot (93.353)				
21st Century Cures Act-Beau Biden Cancer Moonshot	93.353	CA224018	1,222,279	181,900
21st Century Cures Act-Beau Biden Cancer Moonshot	93.353	CA233033	48,724	-



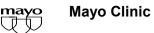
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ederal Agency/Pass-Through Entity/CFDA or Project Description ESEARCH AND DEVELOPMENT CLUSTER (continued)	Number	Award Number	Expenditures	to Subrecipients
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Nursing Research (93.361)				
Nursing Research	93.361	NR15441	\$ 498,157	\$ 198,245
Nursing Research	93.361	NR16433	511,823	Ψ 130,243
Nursing Research	93.361	NR15259	323,216	_
Cancer Cause and Prevention Research (93.393)	30.001	141110200	020,210	
Cancer Cause and Prevention Research	93.393	CA114229	183,648	_
Cancer Cause and Prevention Research	93.393	CA116167	362,422	233,474
Cancer Cause and Prevention Research	93.393	CA126828	2,296	200,111
Cancer Cause and Prevention Research	93.393	CA130996	351,662	_
Cancer Cause and Prevention Research	93.393	CA132878	216,390	_
Cancer Cause and Prevention Research	93.393	CA134514	290,707	_
Cancer Cause and Prevention Research	93.393	CA140290	24,497	_
Cancer Cause and Prevention Research	93.393	CA164533	367,472	198,266
Cancer Cause and Prevention Research	93.393	CA166025	92,155	100,200
Cancer Cause and Prevention Research	93.393	CA168709	36,546	_
Cancer Cause and Prevention Research	93.393	CA176785	271,606	143,539
Cancer Cause and Prevention Research	93.393	CA176830	131,504	
Cancer Cause and Prevention Research	93.393	CA177150	334,280	101,939
Cancer Cause and Prevention Research	93.393	CA179243	271,090	90,227
Cancer Cause and Prevention Research	93.393	CA181178	348,667	-
Cancer Cause and Prevention Research	93.393	CA189666	337,611	_
Cancer Cause and Prevention Research	93.393	CA192393	1,332,549	430,409
Cancer Cause and Prevention Research	93.393	CA195568	2,303,128	1,376,338
Cancer Cause and Prevention Research	93.393	CA197752	19,092	-
Cancer Cause and Prevention Research	93.393	CA200703	664,109	205,240
Cancer Cause and Prevention Research	93.393	CA203971	347,242	
Cancer Cause and Prevention Research	93.393	CA207048	302,651	103,046
Cancer Cause and Prevention Research	93.393	CA207084	688,271	421,306
Cancer Cause and Prevention Research	93.393	CA208517	366,964	-
Cancer Cause and Prevention Research	93.393	CA217183	434,665	_
Cancer Cause and Prevention Research	93.393	CA217889	383,324	_
Cancer Cause and Prevention Research	93.393	CA224917	237,174	_
Cancer Cause and Prevention Research	93.393	CA222867	21,524	_
Cancer Cause and Prevention Research	93.393	CA225662	89,064	_
Cancer Cause and Prevention Research	93.393	CA230712	135,870	_
Cancer Cause and Prevention Research	93.393	CA77839	214,999	188,365
Cancer Cause and Prevention Research	93.393	CA81436	87,893	-
Cancer Cause and Prevention Research	93.393	CA89600	396,815	53,351



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RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Cancer Detection and Diagnosis Research (93.394)				
Cancer Detection and Diagnosis Research	93.394	CA107476	\$ 117,178	\$ -
Cancer Detection and Diagnosis Research	93.394	CA116161	142,395	_
Cancer Detection and Diagnosis Research	93.394	CA148994	63,937	_
Cancer Detection and Diagnosis Research	93.394	CA157581	59,852	_
Cancer Detection and Diagnosis Research	93.394	CA160045	5,159	_
Cancer Detection and Diagnosis Research	93.394	CA168575	440,844	78,492
Cancer Detection and Diagnosis Research	93.394	CA168762	90,949	_
Cancer Detection and Diagnosis Research	93.394	CA170357	55,697	_
Cancer Detection and Diagnosis Research	93.394	CA174723	228,951	30,249
Cancer Detection and Diagnosis Research	93.394	CA177333	170,541	_
Cancer Detection and Diagnosis Research	93.394	CA177734	74,867	_
Cancer Detection and Diagnosis Research	93.394	CA178200	366,279	_
Cancer Detection and Diagnosis Research	93.394	CA180940	6,232	2,513
Cancer Detection and Diagnosis Research	93.394	CA183968	457,090	_
Cancer Detection and Diagnosis Research	93.394	CA187112	629,843	4,729
Cancer Detection and Diagnosis Research	93.394	CA187462	24,237	_
Cancer Detection and Diagnosis Research	93.394	CA191380	29,483	_
Cancer Detection and Diagnosis Research	93.394	CA193541	582,217	145,713
Cancer Detection and Diagnosis Research	93.394	CA195527	568,860	241,196
Cancer Detection and Diagnosis Research	93.394	CA195688	259,741	_
Cancer Detection and Diagnosis Research	93.394	CA196975	121,046	_
Cancer Detection and Diagnosis Research	93.394	CA197120	526,929	51,384
Cancer Detection and Diagnosis Research	93.394	CA204013	622,206	_
Cancer Detection and Diagnosis Research	93.394	CA206584	584,200	258,790
Cancer Detection and Diagnosis Research	93.394	CA210138	672,821	64,076
Cancer Detection and Diagnosis Research	93.394	CA210509	402,664	97,519
Cancer Detection and Diagnosis Research	93.394	CA212162	873,886	38,144
Cancer Detection and Diagnosis Research	93.394	CA214679	194,490	-
Cancer Detection and Diagnosis Research	93.394	CA216855	383,160	115,798
Cancer Detection and Diagnosis Research	93.394	CA217847	207,115	-
Cancer Detection and Diagnosis Research	93.394	CA217847	88,311	_
Cancer Treatment Research (93.395)				
Cancer Treatment Research	93.395	CA116623	442	-
Cancer Treatment Research	93.395	CA13650	495	-
Cancer Treatment Research	93.395	CA150190	562,016	233,130
Cancer Treatment Research	93.395	CA163293	156,242	-
Cancer Treatment Research	93.395	CA163803	149,768	11,312
Cancer Treatment Research	93.395	CA174779	107,555	_
Cancer Treatment Research	93.395	CA175386	324,262	_
Cancer Treatment Research	93.395	CA175795	216,119	_



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RESEARCH AND DEVELOPMENT CLUSTER (continued)		, mai a mannon	-Apoliaitai 00	Cast corploints
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Cancer Treatment Research (93.395) (continued)				
Cancer Treatment Research	93.395	CA177686	\$ 46,289	\$ -
Cancer Treatment Research	93.395	CA179157	169,745	26,598
Cancer Treatment Research	93.395	CA180790	1,708,692	
Cancer Treatment Research	93.395	CA180882	7,002,843	808,741
Cancer Treatment Research	93.395	CA183827	548,074	-
Cancer Treatment Research	93.395	CA185072	235,251	21,227
Cancer Treatment Research	93.395	CA186686	871,900	10,563
Cancer Treatment Research	93.395	CA189823	9,189,054	3,903,804
Cancer Treatment Research	93.395	CA190045	414,739	_
Cancer Treatment Research	93.395	CA190423	306,700	66,765
Cancer Treatment Research	93.395	CA190473	306,050	-
Cancer Treatment Research	93.395	CA193382	178,948	63,306
Cancer Treatment Research	93.395	CA194498	375,084	-
Cancer Treatment Research	93.395	CA195473	288,379	_
Cancer Treatment Research	93.395	CA195503	600,850	229,264
Cancer Treatment Research	93.395	CA195764	77,324	
Cancer Treatment Research	93.395	CA200507	583,590	_
Cancer Treatment Research	93.395	CA200551	179,508	_
Cancer Treatment Research	93.395	CA201226	601,290	361,653
Cancer Treatment Research	93.395	CA201612	101,937	-
Cancer Treatment Research	93.395	CA203561	336,710	_
Cancer Treatment Research	93.395	CA203836	363,943	_
Cancer Treatment Research	93.395	CA205471	204,580	_
Cancer Treatment Research	93.395	CA207183	142,271	4,576
Cancer Treatment Research	93.395	CA207240	354,469	4,070
Cancer Treatment Research	93.395	CA207386	585,340	_
Cancer Treatment Research	93.395	CA207300 CA211887	328,022	_
Cancer Treatment Research	93.395	CA211867 CA215867	119,254	_
Cancer Treatment Research	93.395	CA219960	261,941	58,124
Cancer Treatment Research	93.395	CA222425	57,280	50,124
Cancer Treatment Research	93.395	CA226302	43,550	_
Cancer Treatment Research	93.395	CA227954	137,007	20,054
Cancer Treatment Research	93.395	CA229100	96,060	20,034
Cancer Treatment Research	93.395	CA78383	363,002	_
Cancer Biology Research (93.396)	30.000	0/1/0000	000,002	
Cancer Biology Research	93.396	CA104125	280,673	_
Cancer Biology Research	93.396	CA130908	222,901	_
Cancer Biology Research	93.396	CA136526	384,401	8,348
Cancer Biology Research	93.396	CA154387	156,705	-
Cancer Biology Research	93.396	CA160436	53,315	_
Cancer Biology Research	93.396	CA166347	347,489	4,540

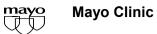


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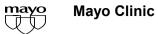
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Federal Agency/Pass-Through Entity/CFDA or Project Description	Number	Award Number	Expenditures	to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Cancer Biology Research (93.396) (continued) Cancer Biology Research	93.396	CA172503	\$ 304,226	¢
	93.396	CA172505 CA178189		φ –
Cancer Biology Research Cancer Biology Research	93.396	CA176169 CA184320	191,763 253,214	20.452
• • • • • • • • • • • • • • • • • • • •				39,452
Cancer Biology Research	93.396	CA184502	630,883	_
Cancer Biology Research	93.396	CA193239	399,881	_
Cancer Biology Research	93.396	CA196631	208,874	_
Cancer Biology Research	93.396	CA196648	323,991	_
Cancer Biology Research	93.396	CA196831	330,802	
Cancer Biology Research	93.396	CA199295	161,906	9,406
Cancer Biology Research	93.396	CA200572	383,508	_
Cancer Biology Research	93.396	CA203849	270,393	_
Cancer Biology Research	93.396	CA204938	13,127	-
Cancer Biology Research	93.396	CA206367	408,171	_
Cancer Biology Research	93.396	CA212127	52,999	-
Cancer Biology Research	93.396	CA214893	306,949	-
Cancer Biology Research	93.396	CA217833	75,977	-
Cancer Biology Research	93.396	CA220378	899,635	186,459
Cancer Biology Research	93.396	CA225680	162,244	-
Cancer Biology Research	93.396	CA234181	1,730	_
Cancer Biology Research	93.396	CA81436	259,161	-
Cancer Biology Research	93.396	CA96985	211,702	-
Cancer Centers Support Grants (93.397)				
Cancer Centers Support Grants	93.397	CA116201	2,729,354	123,750
Cancer Centers Support Grants	93.397	CA15083	7,613,058	144,075
Cancer Centers Support Grants	93.397	CA136393	2,439,497	507,469
Cancer Centers Support Grants	93.397	CA102701	1,980,906	-
Cancer Centers Support Grants	93.397	CA108961	70,821	_
Cancer Centers Support Grants	93.397	CA186781	2,261,691	112,283
Cancer Centers Support Grants	93.397	CA210964	143,004	_
Cancer Research Manpower (93.398)				
Cancer Research Manpower	93.398	CA189339	16,476	_
Cancer Research Manpower	93.398	CA193674	63,051	_
Cancer Research Manpower	93.398	CA199962	49,351	_
Cancer Research Manpower	93.398	CA206388	36,485	_
Cancer Research Manpower	93.398	CA210334	44,101	_
Cancer Research Manpower	93.398	CA213737	35,572	_
Cancer Research Manpower	93.398	CA214523	176,190	_
Cancer Research Manpower	93.398	CA215105	218,264	_
Cancer Research Manpower	93.398	CA218742	176,785	_
Cancer Research Manpower	93.398	CA220660	54,409	_
Cancer Research Manpower	93.398	CA221336	22,086	_
			,	



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RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Cancer Research Manpower (93.398) (continued)				
Cancer Research Manpower	93.398	CA90628	\$ 762,674	\$ 83,370
Cancer Research Manpower	93.398	CA92049	353,268	_
Cancer Research Manpower	93.398	CA234324	16,762	-
Cancer Control (93.399)				
Cancer Control	93.399	CA220242	147,313	-
Cardiovascular Diseases Research (93.837)				
Cardiovascular Diseases Research	93.837	HL07111	381,285	-
Cardiovascular Diseases Research	93.837	HL107304	291,492	33,652
Cardiovascular Diseases Research	93.837	HL110262	494,100	-
Cardiovascular Diseases Research	93.837	HL111407	244,760	-
Cardiovascular Diseases Research	93.837	HL111938	115,129	-
Cardiovascular Diseases Research	93.837	HL114676	12,758	-
Cardiovascular Diseases Research	93.837	HL115144	3,556	-
Cardiovascular Diseases Research	93.837	HL115205	118,648	-
Cardiovascular Diseases Research	93.837	HL116643	120,860	-
Cardiovascular Diseases Research	93.837	HL116952	159,205	-
Cardiovascular Diseases Research	93.837	HL117823	220,349	10,465
Cardiovascular Diseases Research	93.837	HL119337	196,111	132,532
Cardiovascular Diseases Research	93.837	HL119795	568,612	65,410
Cardiovascular Diseases Research	93.837	HL120859	478,100	25,536
Cardiovascular Diseases Research	93.837	HL120957	305,564	-
Cardiovascular Diseases Research	93.837	HL121079	209,183	_
Cardiovascular Diseases Research	93.837	HL123160	646,323	-
Cardiovascular Diseases Research	93.837	HL124045	174,544	_
Cardiovascular Diseases Research	93.837	HL126638	586,896	_
Cardiovascular Diseases Research	93.837	HL127389	45,724	_
Cardiovascular Diseases Research	93.837	HL128526	446,120	_
Cardiovascular Diseases Research	93.837	HL128606	1,497,238	789,494
Cardiovascular Diseases Research	93.837	HL128626	411,458	134,554
Cardiovascular Diseases Research	93.837	HL128859	203,276	813
Cardiovascular Diseases Research	93.837	HL129068	42,758	-
Cardiovascular Diseases Research	93.837	HL131515	558,447	-
Cardiovascular Diseases Research	93.837	HL131535	585,350	222,568
Cardiovascular Diseases Research	93.837	HL132854	451,313	-
Cardiovascular Diseases Research	93.837	HL133501	382,692	285,758
Cardiovascular Diseases Research	93.837	HL134664	304,457	_
Cardiovascular Diseases Research	93.837	HL134668	382,867	_
Cardiovascular Diseases Research	93.837	HL134823	187,708	_
Cardiovascular Diseases Research	93.837	HL134864	238,840	-
Cardiovascular Diseases Research	93.837	HL135070	125,955	-
Cardiovascular Diseases Research	93.837	HL135225	30,028	_



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RESEARCH AND DEVELOPMENT CLUSTER (continued)				
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DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Cardiovascular Diseases Research (93.837) (continued)				
Cardiovascular Diseases Research	93.837	HL135288	\$ 138,191	\$ -
Cardiovascular Diseases Research	93.837	HL135879	369,281	_
Cardiovascular Diseases Research	93.837	HL136340	216,078	_
Cardiovascular Diseases Research	93.837	HL136348	113,653	_
Cardiovascular Diseases Research	93.837	HL136440	515,246	_
Cardiovascular Diseases Research	93.837	HL136659	693,504	_
Cardiovascular Diseases Research	93.837	HL137010	93,354	_
Cardiovascular Diseases Research	93.837	HL140205	138,524	26,221
Cardiovascular Diseases Research	93.837	HL140411	597,640	4,497
Cardiovascular Diseases Research	93.837	HL140951	122,376	4,553
Cardiovascular Diseases Research	93.837	HL141448	77,819	-
Cardiovascular Diseases Research	93.837	HL141819	208,045	_
Cardiovascular Diseases Research	93.837	HL142155	30,182	_
Cardiovascular Diseases Research	93.837	HL36634	367,713	_
Cardiovascular Diseases Research	93.837	HL66216	579,827	_
Cardiovascular Diseases Research	93.837	HL74180	220,574	_
Cardiovascular Diseases Research	93.837	HL81753	380,398	_
Cardiovascular Diseases Research	93.837	HL83947	7,007	_
Cardiovascular Diseases Research	93.837	HL84155	197,207	_
Cardiovascular Diseases Research	93.837	HL85744	146,253	_
Cardiovascular Diseases Research	93.837	HL92621	104,794	_
Cardiovascular Diseases Research	93.837	HL98967	606,407	_
Lung Diseases Research (93.838)	93.037	1120301	000,407	_
Lung Diseases Research	93.838	AG44075	50	
	93.838	HL105355		_
Lung Diseases Research Lung Diseases Research	93.838	HL112849	369,383	_
•			49,207	_
Lung Diseases Research	93.838	HL117823	140,213	_
Lung Diseases Research	93.838	HL125205	440,977	_
Lung Diseases Research	93.838	HL125234	378,139	_
Lung Diseases Research	93.838	HL126451	450,849	_
Lung Diseases Research	93.838	HL126647	478,042	411
Lung Diseases Research	93.838	HL126667	172,389	-
Lung Diseases Research	93.838	HL130881	535,719	293,390
Lung Diseases Research	93.838	HL131151	11,987	-
Lung Diseases Research	93.838	HL131682	75,646	-
Lung Diseases Research	93.838	HL132256	115,951	19,343
Lung Diseases Research	93.838	HL133320	731,701	-
Lung Diseases Research	93.838	HL138150	41,237	_
Lung Diseases Research	93.838	HL140287	20,622	_
Lung Diseases Research	93.838	HL140486	362,829	154,120
Lung Diseases Research	93.838	HL142596	109,630	_



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RESEARCH AND DEVELOPMENT CLUSTER (continued)				
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DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Lung Diseases Research (93.838) (continued)				
Lung Diseases Research	93.838	HL142933	\$ 17,209	\$ -
Lung Diseases Research	93.838	HL144427	9,753	_
Lung Diseases Research	93.838	HL56470	709,917	183,325
Lung Diseases Research	93.838	HL62150	155,162	-
Lung Diseases Research	93.838	HL65228	167,812	_
Lung Diseases Research	93.838	HL88029	177,728	_
Lung Diseases Research	93.838	HL92961	354,360	142,186
Blood Diseases and Resources Research (93.839)			, , , , , , , , , , , , , , , , , , , ,	,
Blood Diseases and Resources Research	93.839	HL118157	292,276	_
Blood Diseases and Resources Research	93.839	HL121232	813,073	442,519
Blood Diseases and Resources Research	93.839	HL137193	201,049	
Blood Diseases and Resources Research	93.839	HL139854	897,072	_
Blood Diseases and Resources Research	93.839	HL141112	23,128	_
Arthritis, Musculoskeletal and Skin Diseases Research (93.846)	33.333		_0,0	
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR27065	550,086	15,493
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR46849	328,755	-
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR49069	490,639	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR49718	355,239	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR55563	306,765	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR56212	321,971	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR56259	196,451	61,425
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR56647	390,478	01,420
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR56950	361,915	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR57745	381,719	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR61567	7,710	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR62613	326,192	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR65397	73,624	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR65402	460,894	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR65753	1,107	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR66508		_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR66643	17,275 76,284	_
Arthritis, Musculoskeletal and Skin Diseases Research				-
Arthritis, Musculoskeletal and Skin Diseases Research	93.846 93.846	AR66696 AR67129	178,518	-
,			497,352	-
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR67421	29,570	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR67707	470,427	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR68103	375,284	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR68275	317,762	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR69850	150,494	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR70241	127,516	-
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR70281	42,172	-
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR71338	379,984	53,230



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DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Arthritis, Musculoskeletal and Skin Diseases Research (93.846)				
(continued)				
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR72597	\$ 280,017	\$ -
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR72634	410,303	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR73147	262,377	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR74262	6,649	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR74270	9,843	_
Diabetes, Digestive, and Kidney Diseases Extramural Research (93.847)			- /	
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK067071	499,202	_
Diabetes, Digestive, and Kidney Diseases Extramural	33.31.	2.100.01.	.00,202	
Research	93.847	DK07013	168,506	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.017	Bitorolo	100,000	
Research	93.847	DK07198	328,643	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.01.	2.10.100	0_0,0.0	
Research	93.847	DK07352	303,084	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.017	DITOTOGE	000,001	
Research	93.847	DK100081	545,298	_
Diabetes, Digestive, and Kidney Diseases Extramural	30.047	DICTOOOOT	040,200	
Research	93.847	DK100227	1,158,959	39,297
Diabetes, Digestive, and Kidney Diseases Extramural	33.047	DICTOOZZI	1, 130,333	33,231
Research	93.847	DK100358	359,220	
Diabetes, Digestive, and Kidney Diseases Extramural	33.047	DI(100000	333,220	_
-	93.847	DK100575	150 276	
Research	93.047	DK100575	159,376	_
Diabetes, Digestive, and Kidney Diseases Extramural	02 047	DK100638	E0 001	
Research	93.847	DK 100030	58,281	_
Diabetes, Digestive, and Kidney Diseases Extramural	02.047	DI/40440E	404.705	
Research	93.847	DK101405	124,795	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	D1/40000E	005 470	
Research	93.847	DK102325	695,172	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	D1/400000	101.051	
Research	93.847	DK102360	194,051	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	DI(4000E0	400 444	400.000
Research	93.847	DK103850	169,111	109,080
Diabetes, Digestive, and Kidney Diseases Extramural	00.04=	D1/100011	440.000	
Research	93.847	DK103911	119,302	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK104273	327,342	_
Diabetes, Digestive, and Kidney Diseases Extramural		- 447-		
Research	93.847	DK105778	13,622	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK106011	137,269	_



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DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Diabetes, Digestive, and Kidney Diseases Extramural Research (93.847)				
(continued)				
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK106056	\$ 62,305	\$ _
Diabetes, Digestive, and Kidney Diseases Extramural	30.017	Bittioooo	Ψ 02,000	Ψ
Research	93.847	DK106427	157,909	_
Diabetes, Digestive, and Kidney Diseases Extramural	33.047	DI(100+21	137,303	
Research	93.847	DK106456	199,610	
	33.047	DK 100430	199,010	_
Diabetes, Digestive, and Kidney Diseases Extramural Research	02 047	DK106667	E02.060	OE 111
	93.847	DK 100007	503,069	85,111
Diabetes, Digestive, and Kidney Diseases Extramural	02.047	DI/4000E7	422.004	
Research	93.847	DK106957	433,681	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	DI//107055	070.004	
Research	93.847	DK107255	379,624	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK107870	164,272	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK108288	590,210	36,381
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK109096	233,574	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK109107	95,707	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK109134	168,558	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK109597	27,892	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK110024	762,398	281,260
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK110136	159,178	_
Diabetes, Digestive, and Kidney Diseases Extramural			•	
Research	93.847	DK111378	352,603	_
Diabetes, Digestive, and Kidney Diseases Extramural			,	
Research	93.847	DK111397	181,104	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.01.	2	,	
Research	93.847	DK111630	351,868	56,012
Diabetes, Digestive, and Kidney Diseases Extramural	30.017	BICTTIOOO	001,000	00,012
Research	93.847	DK111850	97,803	_
Diabetes, Digestive, and Kidney Diseases Extramural	JU.UT1	DIVITIOOU	31,003	_
Research	93.847	DK112326	107,359	
	33.0 4 1	DIVITZOZO	107,309	_
Diabetes, Digestive, and Kidney Diseases Extramural	02 047	DI/44004E	404.044	
Research	93.847	DK112915	104,844	_



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RESEARCH AND DEVELOPMENT CLUSTER (continued)				
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DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Diabetes, Digestive, and Kidney Diseases Extramural Research (93.847)				
(continued)				
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK113339	\$ 22,274	\$ _
Diabetes, Digestive, and Kidney Diseases Extramural	30.041	DI(110003	Ψ 22,214	Ψ
Research	93.847	DK113999	35,472	
	93.047	DK113333	33,472	_
Diabetes, Digestive, and Kidney Diseases Extramural Research	93.847	DK114007	210 515	
	93.047	DK 114007	348,545	-
Diabetes, Digestive, and Kidney Diseases Extramural	02 047	DV444407	100 514	
Research	93.847	DK114497	129,514	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	D1/444400	20.057	
Research	93.847	DK114460	39,957	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.04=	D1///-100	40.000	
Research	93.847	DK115402	13,366	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK115594	136,120	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK115950	505,326	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK116231	571,407	40,013
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK116587	5,000	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK118120	56,947	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK118391	28,951	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK118619	82,624	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK24031	19,712	_
Diabetes, Digestive, and Kidney Diseases Extramural			•	
Research	93.847	DK40484	389,678	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK41876	355,701	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.011	Bittioro	000,101	
Research	93.847	DK44650	298,620	_
Diabetes, Digestive, and Kidney Diseases Extramural	55.511	DICTIOO	200,020	
Research	93.847	DK44863	401,433	
Diabetes, Digestive, and Kidney Diseases Extramural	33.041	DN44003	401,433	_
	02 947	DKVESVS	E11 00E	
Research	93.847	DK45343	544,065	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	DI(47000	400 400	
Research	93.847	DK47060	420,422	_



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DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Diabetes, Digestive, and Kidney Diseases Extramural Research (93.847)				
(continued)				
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK52766	\$ 323,491	\$ -
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK57061	182,854	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK57993	376,477	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK58185	555,442	20,393
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK58816	254,665	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK59427	39,237	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK59597	469,070	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK59615	315,852	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK63947	197,078	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK68055	2,164,780	19,301
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK78646	201,661	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK78924	160,788	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK79856	468,116	13,322
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK80670	231,467	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK83908	1,366,521	452,092
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK84567	1,382,429	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK90038	333,412	-
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK90358	555,086	58,031
Diabetes, Digestive, and Kidney Diseases Extramural				_
Research	93.847	DK90728	1,230,272	96,163
Diabetes, Digestive, and Kidney Diseases Extramural		B1/222==		
Research	93.847	DK92255	336,229	_



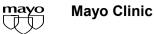
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RESEARCH AND DEVELOPMENT CLUSTER (continued)			· · ·	<u> </u>
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Diabetes, Digestive, and Kidney Diseases Extramural Research (93.847)				
(continued)				
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK92460	\$ 383,905	\$ -
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK97054	56,175	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK98468	329,728	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK99160	253,142	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK99231	41,911	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders (93.853)				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS100693	1,467,090	853,299
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92940	418,756	62,393
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS76491	476,294	142,991
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS80820	212,741	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92955	597,070	291,111
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS100620	651,285	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS100725	608,201	56,569
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS101721	396,727	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS103212	528,100	3,000
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS103870	591,435	88,225
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS104315	237,149	85,178
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS104392	77,063	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS105853	217,253	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS107265	86,136	_



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DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders (93.853) (continued)				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS107336	\$ 153,830	\$ -
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS109444	22,223	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS109956	27,179	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS6277	237,564	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS31744	314,192	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS44233	41,338	36,614
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS86853	356,709	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS88256	7,982	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS88260	299,795	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS80168	6,567,491	3,290,705
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS84974	991,366	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS84975	529,953	408,516
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS85070	305,967	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS89544	326,767	292,618
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS90455	31,778	1,629
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS89757	451,152	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92625	657,260	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92882	431,785	229,831
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS94137	260,840	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS94489	130,691	-



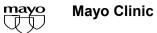
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Federal Agency/Pass-Through Entity/CFDA or Project Description RESEARCH AND DEVELOPMENT CLUSTER (continued)	Number	Award Number	Expenditures	to Subrecipients
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued) Extramural Research Programs in the Neurosciences and				
Neurological Disorders (93.853) (continued)				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS93118	\$ 74,697	¢
Extramural Research Programs in the Neurosciences and	93.033	N333110	ψ 14,031	Ψ –
Neurological Disorders	93.853	NS72187	145,605	
Extramural Research Programs in the Neurosciences and	93.033	N372107	143,003	_
Neurological Disorders	93.853	NS64571	305,670	
Extramural Research Programs in the Neurosciences and	93.033	11304371	303,070	_
Neurological Disorders	93.853	NS94124	324,521	151,126
Extramural Research Programs in the Neurosciences and	93.003	11094124	324,321	151,120
	93.853	NS52741	60 516	
Neurological Disorders Extramural Research Programs in the Neurosciences and	93.033	N552741	60,516	_
•	93.853	NS97261	020 014	
Neurological Disorders	93.033	N391201	920,814	_
Extramural Research Programs in the Neurosciences and	93.853	NC07072	600 107	
Neurological Disorders	93.003	NS97273	698,127	_
Extramural Research Programs in the Neurosciences and	00.050	N000004	000 500	
Neurological Disorders	93.853	NS99631	203,539	_
Extramural Research Programs in the Neurosciences and	00.050	NO04004	05.040	
Neurological Disorders	93.853	NS94684	85,618	_
Extramural Research Programs in the Neurosciences and	00.050	NO70000	110 500	
Neurological Disorders	93.853	NS78086	119,560	_
Extramural Research Programs in the Neurosciences and	00.050	NO70400	44.077	
Neurological Disorders	93.853	NS78136	44,677	_
Extramural Research Programs in the Neurosciences and	00.050	NO04705	07.000	
Neurological Disorders	93.853	NS94765	67,900	_
Extramural Research Programs in the Neurosciences and	00.050	N005405	4 700 005	500.000
Neurological Disorders	93.853	NS95495	1,793,695	529,886
Extramural Research Programs in the Neurosciences and	00.050	N007405	224.050	
Neurological Disorders	93.853	NS97495	331,659	_
Extramural Research Programs in the Neurosciences and	00.050	N000757	400,000	
Neurological Disorders	93.853	NS99757	108,999	_
Extramural Research Programs in the Neurosciences and	00.050	NO70040	4 405 050	445 500
Neurological Disorders	93.853	NS73610	1,105,258	445,538
Extramural Research Programs in the Neurosciences and	00.050	N000007	100.010	
Neurological Disorders	93.853	NS88627	430,312	_
Extramural Research Programs in the Neurosciences and	00.000	NOC (= 10	000 100	
Neurological Disorders	93.853	NS91749	606,466	-
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92891	128,930	-



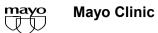
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DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Allergy and Infectious Diseases Research (93.855)				
Allergy and Infectious Diseases Research	93.855	AI07047	\$ 68,124	\$ -
Allergy and Infectious Diseases Research	93.855	AI07425	227,110	_
Allergy and Infectious Diseases Research	93.855	AI100911	230,578	_
Allergy and Infectious Diseases Research	93.855	AI105066	96,554	_
Allergy and Infectious Diseases Research	93.855	AI110173	709,529	_
Allergy and Infectious Diseases Research	93.855	AI112844	424,324	31,618
Allergy and Infectious Diseases Research	93.855	AI121054	361,243	246,727
Allergy and Infectious Diseases Research	93.855	AI114833	14,295	-
Allergy and Infectious Diseases Research	93.855	AI116839	535	_
Allergy and Infectious Diseases Research	93.855	AI119612	74,755	_
Allergy and Infectious Diseases Research	93.855	AI120698	274,896	_
Allergy and Infectious Diseases Research	93.855	AI120959	443,931	_
Allergy and Infectious Diseases Research	93.855	AI122746	338,530	_
Allergy and Infectious Diseases Research	93.855	AI122838	153,617	_
Allergy and Infectious Diseases Research	93.855	AI125719	100,607	_
Allergy and Infectious Diseases Research	93.855	AI125747	72,465	50,870
Allergy and Infectious Diseases Research	93.855	AI125870	201,419	_
Allergy and Infectious Diseases Research	93.855	AI127365	1,049,455	_
Allergy and Infectious Diseases Research	93.855	AI127998	220,702	_
Allergy and Infectious Diseases Research	93.855	AI128037	146,827	_
Allergy and Infectious Diseases Research	93.855	AI128729	509,009	286,723
Allergy and Infectious Diseases Research	93.855	AI130298	347,165	
Allergy and Infectious Diseases Research	93.855	AI131011	23,620	_
Allergy and Infectious Diseases Research	93.855	AI132165	29,412	_
Allergy and Infectious Diseases Research	93.855	Al132348	618,275	_
Allergy and Infectious Diseases Research	93.855	AI132840	119,539	2,218
Allergy and Infectious Diseases Research	93.855	Al33144	368,823	_,
Allergy and Infectious Diseases Research	93.855	AI136718	228,335	40,169
Allergy and Infectious Diseases Research	93.855	Al138965	127,961	-
Allergy and Infectious Diseases Research	93.855	AI142702	1,200	_
Allergy and Infectious Diseases Research	93.855	Al48793	856,946	_
Allergy and Infectious Diseases Research	93.855	AI71106	443,893	87,542
Allergy and Infectious Diseases Research	93.855	Al83279	377,046	-
Allergy and Infectious Diseases Research	93.855	AI89714	378,576	
Allergy and Infectious Diseases Research	93.855	Al91594	106,876	
Allergy and Infectious Diseases Research	93.855	AI95239	380,617	
Allergy and Infectious Diseases Research	93.855	Al96326	228,350	_
Allergy and Infectious Diseases Research	93.855	Al96967	106,489	_
Biomedical Research and Research Training (93.859)	30.000	/11000/	100,403	_
Biomedical Research and Research Training (95.059)	93.859	GM063904	632,461	216,137
Biomedical Research and Research Training	93.859	GM08685	398,552	210,107
Biomedical Research and Research Training	93.859	GM102282	510	6,824
Biomodical recoding and recoding training	33.000	Sin IOLLOL	010	0,024



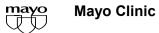
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DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Biomedical Research and Research Training (93.859) (continued)	02.050	014400757	ф <u>го</u> 4 о4 с	ф 207.70 <i>г</i>
Biomedical Research and Research Training	93.859	GM123757	\$ 581,916	\$ 307,795
Biomedical Research and Research Training	93.859	GM116826	449,253	_
Biomedical Research and Research Training	93.859	GM116829	250,599	_
Biomedical Research and Research Training	93.859	GM125633	251,886	_
Biomedical Research and Research Training	93.859	GM126086	60,186	_
Biomedical Research and Research Training	93.859	GM128253	186,546	_
Biomedical Research and Research Training	93.859	GM128579	23,194	_
Biomedical Research and Research Training	93.859	GM128594	93,225	-
Biomedical Research and Research Training	93.859	GM28157	660,485	28,240
Biomedical Research and Research Training	93.859	GM54200	339,643	-
Biomedical Research and Research Training	93.859	GM55252	417,611	-
Biomedical Research and Research Training	93.859	GM55816	401,250	-
Biomedical Research and Research Training	93.859	GM65450	147,612	-
Biomedical Research and Research Training	93.859	GM65841	264,736	_
Biomedical Research and Research Training	93.859	GM72474	139,961	-
Biomedical Research and Research Training	93.859	GM75148	513,167	_
Biomedical Research and Research Training	93.859	GM75965	438,677	118,490
Biomedical Research and Research Training	93.859	NSF1744557	51,131	_
Biomedical Research and Research Training	93.859	OD21879	316,732	73,208
Child Health and Human Development Extramural Research (93.865)				
Child Health and Human Development Extramural Research	93.865	HD42569	317,216	_
Child Health and Human Development Extramural Research	93.865	HD65987	574,327	_
Child Health and Human Development Extramural Research	93.865	HD71907	105,378	_
Child Health and Human Development Extramural Research	93.865	HD79439	862,468	414,206
Child Health and Human Development Extramural Research	93.865	HD84423	468,470	37,097
Child Health and Human Development Extramural Research	93.865	HD89035	152,475	103,817
Child Health and Human Development Extramural Research	93.865	HD91337	41,720	_
Aging Research (93.866)	33.333		,. = 0	
Aging Research	93.866	AG04875	1,728,576	_
Aging Research	93.866	AG06786	2,356,991	_
Aging Research	93.866	AG11378	157,157	_
Aging Research	93.866	AG13925	586,266	97,539
Aging Research	93.866	AG16574	2,489,324	31,555
Aging Research	93.866	AG19695	38,509	_
	93.866	AG26094		_
Aging Research			9,018	_
Aging Research	93.866	AG27924	361,336	_
Aging Research	93.866	AG28141	37,631	_
Aging Research	93.866	AG29362	127,846	-
Aging Research	93.866	AG34676	685,894	41,280
Aging Research	93.866	AG35355	133,571	_



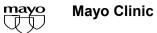
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DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Aging Research (93.866) (continued)				
Aging Research	93.866	AG37491	\$ 362,209	\$ -
Aging Research	93.866	AG40042	38,342	_
Aging Research	93.866	AG41676	210,907	_
Aging Research	93.866	AG41851	805,949	_
Aging Research	93.866	AG44170	308,664	_
Aging Research	93.866	AG44615	393,820	_
Aging Research	93.866	AG45390	4,620,801	3,017,129
Aging Research	93.866	AG46061	19,261	-
Aging Research	93.866	AG46205	78,646	_
Aging Research	93.866	AG47156	441,769	_
Aging Research	93.866	AG47327	55,540	_
Aging Research	93.866	AG47984	5,161	_
Aging Research	93.866	AG48792	210,017	_
Aging Research	93.866	AG49182	7	_
Aging Research	93.866	AG49672	176,690	_
Aging Research	93.866	AG49704	212,261	_
Aging Research	93.866	AG50390	27,043	_
Aging Research	93.866	AG50603	441,505	_
Aging Research	93.866	AG50640	97,827	47,412
Aging Research	93.866	AG50804	83,439	
Aging Research	93.866	AG51504	1,894,435	225,045
Aging Research	93.866	AG51679	216,574	
Aging Research	93.866	AG52423	194,197	_
Aging Research	93.866	AG52425	608,688	42,678
Aging Research	93.866	AG52822	142,444	
Aging Research	93.866	AG52958	223,109	26,939
Aging Research	93.866	AG53229	474,059	
Aging Research	93.866	AG53242	188,626	_
Aging Research	93.866	AG53500	309,090	27,152
Aging Research	93.866	AG53512	209,124	
Aging Research	93.866	AG53832	579,680	172,059
Aging Research	93.866	AG54102	317,558	-
Aging Research	93.866	AG54449	955,719	_
Aging Research	93.866	AG54454	549,715	_
Aging Research	93.866	AG54890	154,767	_
Aging Research	93.866	AG55151	654,116	
Aging Research	93.866	AG55529	74,321	_
Aging Research	93.866	AG55549	74,321	_
Aging Research	93.866	AG55677	42,615	_
Aging Research	93.866	AG56255	465,288	_ 268,544
Aging Research	93.866	AG56315	558,900	352,934
Aying nesearch	33.000	AG30313	000,900	332,934



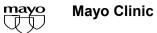
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DIRECT AWARDS (continued)				
National Institutes of Health (continued)				
Aging Research (93.866) (continued)				
Aging Research	93.866	AG56366	\$ 518,553	\$ 22,616
Aging Research	93.866	AG57015	186,172	_
Aging Research	93.866	AG57052	518,880	_
Aging Research	93.866	AG57181	357,099	_
Aging Research	93.866	AG57493	156,180	_
Aging Research	93.866	AG57547	891,066	364,664
Aging Research	93.866	AG57708	156,510	_
Aging Research	93.866	AG57981	212,554	_
Aging Research	93.866	AG57997	183,946	_
Aging Research	93.866	AG58266	193,502	_
Aging Research	93.866	AG58560	271,185	_
Aging Research	93.866	AG58699	35,071	_
Aging Research	93.866	AG58738	60,153	_
Aging Research	93.866	AG58812	171,847	_
Aging Research	93.866	AG60139	20,294	_
Aging Research	93.866	AG61796	137,473	_
Vision Research (93.867)				
Vision Research	93.867	EY24333	472,134	189,596
Vision Research	93.867	EY21727	197,707	_
Vision Research	93.867	EY26095	60,102	_
Vision Research	93.867	EY26490	543,464	197,862
Medical Library Assistance (93.879)				
Medical Library Assistance	93.879	LM12120	40,653	_
Medical Library Assistance	93.879	LM11934	426,910	182,446
Medical Library Assistance	93.879	LM12102	155,842	_
Contract				
Contract	93.RD	HHS-A-290-2015-00013I	652,820	_
Contract	93.RD	HHS-N-261-2011-00099C	14,497	_
Contract	93.RD	HHS-N-261-2012-00042I	1,994,977	754,178
Contract	93.RD	HHS-N-261-2017-00091A	60,080	_
Contract	93.RD	HHS-N-261-2017-00459P	16,070	_
Contract	93.RD	HHS-N-261-2016-00024I	115,405	_
Contract	93.RD	HHS-N-268-2016-00003I	84,456	_
Contract	93.RD	HHS-N-268-2016-00004I	112,941	_
Contract	93.RD	HHS-N-275-2018-00005I	59,850	20,968
Contract	93.RD	HHS-N-275-2018-00696P	3,105	_
Contract	93.RD	HHS-N-275-2018-00249P	1,260	_
Contract	93.RD	IPA Agreement	71,497	_
Contract	93.RD	VA263-17-Q-0877	20,711	_
Subtotal Direct Awards			277,573,992	33,388,448
				23,000,.10



	CFDA	Federal/Pass-Through	Federal	Pass-Through
Federal Agency/Pass-Through Entity/CFDA or Project Description	Number	Award Number	Expenditures	to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS				
Abt Associates Inc.				
Contract	93.RD	HHS-D-2000-2013-M53890B	\$ 5,800	\$ -
Contract	93.RD	CDC #44982	3,500	-
Advanced Brain Monitoring, Inc.				
Aging Research	93.866	AG50326	20,617	-
Aging Research	93.866	AG54256	8,048	-
Advanced Medical Electronics Corporation				
Child Health and Human Development Extramural Research	93.865	HD86108	40,622	-
Affinity Therapeutics, LLC				
Cardiovascular Diseases Research	93.837	HL137549	28,307	_
Albert Einstein College of Medicine of Yeshiva University				
Lung Diseases Research	93.838	HL125119	405,310	_
Aging Research	93.866	AG03949	101,911	_
Cancer Detection and Diagnosis Research	93.394	CA218429	107,673	_
American Academy of Child and Adolescent Psychiatry				
Contract	93.RD	HHS-N-271-2017-00059C	5,436	_
American College of Radiology				
Cancer Detection and Diagnosis Research	93.394	CA80098	887	_
Arizona State University				
Mental Health Research Grants	93.242	MH108992	28,963	_
Nursing Research	93.361	NR16046	27,270	_
Cancer Cause and Prevention Research	93.393	CA213035	22,288	_
Cancer Detection and Diagnosis Research	93.394	CA199948	13,444	-
Cancer Treatment Research	93.395	CA182901	2,677	-
Cancer Biology Research	93.396	CA196460	35,761	-
Cardiovascular Diseases Research	93.837	HL128785	35,163	-
Aging Research	93.866	AG54048	16,822	-
Banner Alzheimer's Institute				
Aging Research	93.866	AG55444	52,911	-
Baylor Research Institute				
Cancer Detection and Diagnosis Research	93.394	CA214125	6,404	-
Boston University				
Cancer Biology Research	93.396	CA214292	83,326	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS93334	230,519	80,396
Aging Research	93.866	AG56318	90,834	-
Brigham and Women's Hospital				
Human Genome Research	93.172	HG06834	106,570	-
Cancer Treatment Research	93.395	CA180821	418,272	_
Cancer Treatment Research	93.395	A021101	1,041	-
Cardiovascular Diseases Research	93.837	HL130163	21,645	_
Blood Diseases and Resources Research	93.839	HL116854	4,198	_



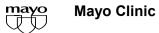
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
Caladrius Biosciences				
Cardiovascular Diseases Research	93.837	HL135889	\$ 127,238	\$ -
California Pacific Medical Center				
Aging Research	93.866	AG52964	85,770	_
Case Western Reserve University				
Cancer Centers Support Grants	93.397	CA163060	44,202	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK114812	6,095	_
Lung Diseases Research	93.838	HL138402	239,274	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK104438	25,308	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK94157	83,168	_
The Children's Hospital Of Philadelphia				
Cancer Treatment Research	93.395	CA097452	18,012	_
Cancer Treatment Research	93.395	CA180886	76,737	_
Children's Hospital Med Center (Cincinnati)				
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR67997	13,318	_
Children's Hospital of Boston				
Human Genome Research	93.172	HG10004	28,129	_
Cleveland Clinic Foundation				
Lung Diseases Research	93.838	HL119792	10,507	_
Lung Diseases Research	93.838	HL125177	290,181	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS97719	85,784	_
Coalition of Ntl Cancer Coop				
Cancer Detection and Diagnosis Research	93.394	CA196172	32,401	_
Cancer Treatment Research	93.395	CA180820	38,909	_
Columbia University				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS97876	207,774	51,425
Cancer Centers Support Grants	93.397	CA163004	237,634	_
Cancer Cause and Prevention Research	93.393	CA204297	111,063	_
Aging Research	93.866	AG56270	95,100	_
Cornell College-Vet Medicine				
Biomedical Research and Research Training	93.859	GM105688	167,890	_
Dana-Farber Cancer Institute				
Cancer Treatment Research	93.395	CA205406	34,843	_
Aging Research	93.866	AG60626	29,819	_
Dartmouth College				
Research on Healthcare Costs, Quality and Outcomes	93.226	HS24075	156,081	-



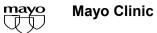
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
Duke Clinical Research Institute				
Cancer Treatment Research	93.395	CA76001	\$ 4,188	\$ -
Cardiovascular Diseases Research	93.837	HL133817	25,383	_
Cardiovascular Diseases Research	93.837	HL84904	58,446	_
Duke University				
Research on Healthcare Costs, Quality and Outcomes	93.226	HS23418	316,397	_
Mental Health Research Grants	93.242	MH108348	25,478	_
Allergy and Infectious Diseases Research	93.855	AI104681	185,377	_
Aging Research	93.866	AG59093	4,567	_
Contract	93.RD	HHS-N-275-2010-00003I	40,096	_
Eastern Cooperative Oncology Group			,	
Cancer Treatment Research	93.395	E1412	17,605	_
Cancer Treatment Research	93.395	E1411	4,676	_
Enterprise Science			,	
Contract	93.RD	HHS-P-233-2017-00054C	31,214	_
Florida International University				
Drug Abuse and Addiction Research Programs	93.279	DA40381	55,762	_
Florida State University	00.2.0	27110001	33,. 32	
Aging Research	93.866	AG45703	79,984	_
Fred Hutchinson Cancer Research Center	00.000	7.0.00	. 0,00	
Cancer Cause and Prevention Research	93.393	CA137088	231,958	_
Cancer Cause and Prevention Research	93.393	CA176272	5,262	_
Cancer Cause and Prevention Research	93.393	CA182940	20,771	_
Cancer Detection and Diagnosis Research	93.394	CA214114	62,936	_
Frontier Science and Technology Research Foundation		0/2////	32,000	
Cancer Treatment Research	93.395	ECOG #6	2,118	_
Great Lakes Hemophilia Foundation	00.000	2000 110	_,	
Blood Disorder Program: Prevention, Surveillance, and Research	93.080	DD01155	20,873	_
H. Lee Moffit Cancer Center and Research Institute, Inc.	00.000	2201100		
Cancer Cause and Prevention Research	93.393	CA207456	61,102	_
Cancer Centers Support Grants	93.397	CA193489	284,600	_
Hennepin Healthcare Research			,,,,,	
Aging Research	93.866	AG58729	11,001	_
ICF Resources, Inc.			,	
Contract	93.RD	HHS-N-261-2012-000010I	108,204	_
ICAHN School of Medicine			,	
Cardiovascular Diseases Research	93.837	HL88942	37,262	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR72222	9,250	_
ICON Clinical Research			,	
Cardiovascular Diseases Research	93.837	HL117006	17,202	_
Imanis Life Sciences			,	
National Center for Advancing Translational Sciences	93.350	TR001191	96,261	_
Imbio, LLC			55,251	
Cancer Cause and Prevention Research	93.393	CA203050	27,108	_



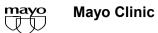
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)		74.44		to cameopionio
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
Immunogen X				
Research and Training in Complementary and Integrative Health	93.213	AT09637	\$ 63,364	\$ -
Indiana University				
Drug Abuse and Addiction Research Programs	93.279	DA43391	51,077	_
Cancer Cause and Prevention Research	93.393	CA194600	5,903	-
Allergy and Infectious Diseases Research	93.855	AI117835	35,381	-
Aging Research	93.866	AG57195	126,588	-
Innovative Design Labs Inc.				
Aging Research	93.866	AG55152	54,348	=
Intelligent Automation Inc.				
Contract	93.RD	IAI #2363	9,000	=
Institute for Clinical Research				
Allergy and Infectious Diseases Research	93.855	AI68641	82,890	_
Iowa State University			•	
Research Infrastructure Programs	93.351	OD20166	499,275	_
Iron Horse Diagnostics, Inc.				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS83227	6,231	_
Jaeb Center for Health Research			-,	
Vision Research	93.867	EY11751	253,400	_
Vision Research	93.867	EY14231	15,254	-
Johns Hopkins University			-, -	
Discovery and Applied Research for Technological				
Innovations to Improve Human Health	93.286	EB016721	118,005	-
National Center for Advancing Translational Sciences	93.350	TR02019	53,020	-
Cancer Cause and Prevention Research	93.393	CA154823	37,065	-
Cancer Detection and Diagnosis Research	93.394	CA200399	146,516	-
Diabetes, Digestive, and Kidney Diseases Extramural			•	
Research	93.848	DK74008	327,957	-
Extramural Research Programs in the Neurosciences and			•	
Neurological Disorders	93.853	NS80824	9,577	_
Aging Research	93.866	AG40282	25,239	_
Aging Research	93.866	AG50745	69,487	_
Aging Research	93.866	AG54491	247,857	_
Aging Research	93.866	AG56933	178,473	_
Koronis Biomedical Tech Corp			,	
National Center for Advancing Translational Sciences	93.350	AG58516	16,911	_
Lam Foundation				
National Center for Advancing Translational Sciences	93.350	HL127672	500	_
Leidos Biomedical Research				
Contract	93.RD	HHS-N-261-2008-00001E	691,841	_
Leukogene Therapeutics, Inc/			33.,311	
Cancer Treatment Research	93.395	CA13488	62,015	_
Sanor Heading (1000ale)	33.000	0, 110 100	02,010	



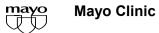
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)			· · ·	· · · · · · · · · · · · · · · · · · ·
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
Marblehead Medical, LLC				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS103670	\$ 56,118	\$ -
Massachusetts Eye & Ear Infirmary				
Vision Research	93.867	EY22305	2,475	_
Massachusetts General Hospital			·	
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS90259	55,369	_
Massachusetts Institute			,	
Cancer Centers Support Grants	93.397	CA210180	991,370	_
Cancer Centers Support Grants	93.397	CA14051	192,308	_
MDI Biological Laboratory			,	
Cancer Biology Research	93.396	CA215973	35,627	_
Medical College of Wisconsin	30.000	O/1210010	00,027	
Cancer Cause and Prevention Research	93.393	CA203923	4,276	_
Cancer Detection and Diagnosis Research	93.394	CA212097	180,907	_
Medical University of South Carolina	30.004	O/12 12001	100,007	
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK104833	39,734	_
Methodist Hospital Research	33.047	DI(10 1 000	33,734	_
Cancer Centers Support Grants	93.397	CA210181	12,453	
Minneapolis Medical Research Foundation	93.391	CAZIOIOI	12,433	_
Aging Research	93.866	AG45032	809	
Minnesota Department of Health	93.000	AG45052	009	_
·				
Hospital Preparedness Program (HPP) Ebola Preparedness	93.817	MDU102271	20 120	
and Response Activities Hospital Preparedness Program (HPP) Ebola Preparedness	93.017	MDH102271	38,438	_
and Response Activities	93.817	MDH104013	144.026	
·			144,936	_
National Bioterrorism Hospital Preparedness Program	93.889	MDH10327	202,281	_
Minnesota Health Solutions Corporation	02.040	M11400400	0.150	
Mental Health Research Grants	93.242	MH109190	9,159	_
Mental Health Research Grants	93.242	MH114716	90,393	_
Research and Training in Complementary and Integrative Health	93.213	AT09665 HL114162	39,365	_
Lung Diseases Research	93.838	∏L114102	87,425	_
Miyazaki Enterprises, LLC	02.065	11004454	7 720	
Child Health and Human Development Extramural Research	93.865	HD84151	7,732	_
Modulation Therapeutics	00.005	04405040	40.050	
Cancer Treatment Research	93.395	CA195946	13,256	_
Cancer Treatment Research	93.395	CA210669	122,668	_
Mount Sinai Medical Center of Florida	00.000	10/0/-0	0-0 :-	
Aging Research	93.866	AG46170	27,015	_
Cancer Treatment Research	93.395	CA108671	313,702	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.5:-	B1// 100-0		
Research	93.847	DK113272	25,305	_



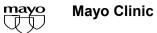
	CFDA	Federal/Pass-Through	Federal	Pass-Through
Federal Agency/Pass-Through Entity/CFDA or Project Description	Number	Award Number	Expenditures	to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
Mount Sinai School of Medicine at NYU	00.005	0.400540	0.440	•
Cancer Treatment Research	93.395	CA39542	\$ 9,449	\$ -
Blood Diseases and Resources Research	93.839	HHS-N-268-2018-00005I	19,467	_
Aging Research	93.866	AG54014	52,285	_
National Marrow Donor Program		D. 17 OT) 1-01		
Blood Diseases and Resources Research	93.839	BMT CTN 1501	17,141	-
Blood Diseases and Resources Research	93.839	BMT CTN 1506	46,472	-
Neural YNX Inc.				
Mental Health Research Grants	93.242	MH116524	11,982	-
Neurosigma, Inc				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS74576	121,211	-
New England Research Institute				
Cardiovascular Diseases Research	93.837	HL107407	1,304	-
New York Academy of Medicine				
Research on Healthcare Costs, Quality and Outcomes	93.226	HS22670	3,485	-
New York School of Medicine				
Research and Training in Complementary and Integrative Health	93.213	AT09844	876	-
Cardiovascular Diseases Research	93.837	HL105907	136,210	_
Cardiovascular Diseases Research	93.837	HL117905	33,672	_
Vision Research	93.867	EY26869	6,155	-
NORC				
Contract	93.RD	200-2013-M-53955	3,119	-
North Dakota State University				
Aging Research	93.866	AG51574	139,472	-
Lung Diseases Research	93.838	HL123494	91,891	-
Northwestern University				
Research Related to Deafness and Communication Disorders	93.173	DC13115	159,169	_
Cancer Centers Support Grants	93.397	CA221205	18,853	_
Blood Diseases and Resources Research	93.839	HL112792	143,548	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK110172	20,596	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK104876	161,444	_
Aging Research	93.866	AG55121	5,663	_
Aging Research	93.866	AG57441	46,189	_
Contract	93.RD	HHS-N-261-2012-00035I	10,729	_
NRG Oncology Foundation				
Cancer Treatment Research	93.395	CA180868	5,063	_
Ohio State University				
Cancer Treatment Research	93.395	CA189823	896	_
Oklahoma Medical Research Foundation				
Cardiovascular Diseases Research	93.837	HL120877	181,834	-



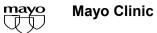
	CFDA	Federal/Pass-Through	Federal	Pass-Through
Federal Agency/Pass-Through Entity/CFDA or Project Description	Number	Award Number	Expenditures	to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
Oregon Health Sciences University				
Cardiovascular Diseases Research	93.837	HL85631	\$ 79,075	\$ -
Lung Diseases Research	93.838	HL124165	175,070	_
Cancer Treatment Research	93.395	CA180888	16,608	-
Partners Health Care Res Mgmt				
Cancer Detection and Diagnosis Research	93.394	CA84203	144,298	-
Lung Diseases Research	93.838	HL137366	121,035	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS80223	89,004	_
Pennsylvania State University				
Vision Research	93.867	EY23533	182	_
Princeton University				
Cancer Biology Research	93.396	CA187692	82,905	_
Radiological Society of North America				
Contract	93.RD	HHS-N-268-2012-00078C	28,115	_
Recombinetics, Inc.				
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK104500	136,440	_
The Research Institute at Nationwide Children's Hospital			·	
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK100866	1,484	_
Rosivo, Inc.			, -	
Contract	93.RD	ROSIVO	10,043	_
RTC Electronics, Inc.			,	
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK116610	613	_
Rush University				
Alcohol Research Programs	93.273	AA23417	147,467	_
Rutgers	00.270	70120111	,	
Child Health and Human Development Extramural Research	93.865	HD91512	2,155	_
Sanford-Burnham Medical	00.000		_,.00	
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK108743	10,159	_
Aging Research	93.866	AG56130	344,538	_
Scripps Research Institute	00.000	71000100	011,000	
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS99114	276,961	_
Sersense, Inc.	30.000	11000114	270,301	
Child Health and Human Development Extramural Research	93.865	HD96993	10,860	
Sloan-Kettering	30.000	11030333	10,000	_
Cancer Cause and Prevention Research	93.393	CA209533	27,193	
				_
Blood Diseases and Resources Research	93.839	HL129472	14,461	_



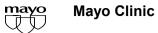
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				<u> </u>
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
Social & Scientific Systems, Inc.				
Contract	93.RD	PHR-SSS-S-17-005192J	\$ 59,218	\$ -
Contract	93.RD	11XS088	28,015	_
Southern Illinois University			-,-	
Aging Research	93.866	AG19899	783	_
St. Joseph Hospital				
Cancer Detection and Diagnosis Research	93.394	CA158079	47,491	_
Cancer Detection and Diagnosis Research	93.394	CA213158	5,977	_
Cancer Detection and Diagnosis Research	93.394	CA221938	17,970	_
Stanford University	00.001	O/ 122 1000	11,010	
Cancer Cause and Prevention Research	93.393	CA167551	354,855	_
Stellenbosch University	30.030	0/110/301	004,000	
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS98862	3,993	
Sun Health Research Institute	93.033	11030002	3,993	_
	93.866	AG31581	105 705	
Aging Research			125,725	_
Aging Research Texas Biomedical Research Institute	93.866	AG19610	249,341	_
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	DI//1/0000	04 400	
Research	93.847	DK110096	21,486	_
The Gynecological Oncology Group		0.1.100=00	44.000	
Cancer Treatment Research	93.395	CA180790	14,888	-
The Jackson Laboratory				
Aging Research	93.866	AG055104	22,522	-
Thermedical, Inc.				
Cardiovascular Diseases Research	93.837	HL132746	762,342	-
Tufts Medical Center, Inc.				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS102233	244,299	-
University at Buffalo				
Cancer Treatment Research	93.395	CA198096	10,868	-
University of Alabama				
Blood Diseases and Resources Research	93.839	HL138645	22,243	-
Cancer Cause and Prevention Research	93.393	CA186646	24,900	-
Cancer Treatment Research	93.395	CA189823	228	-
Contract	93.RD	HHS-N-268-2018-00005I	10,532	-
University of Arizona				
Family Smoking Prevention and Tobacco Control Act Regulatory				
Research	93.077	DA37378	58,757	_
Grants to Increase Organ Donations	93.134	HS30586	17,577	_
University of California-Davis				
Cardiovascular Diseases Research	93.837	HL121068	196,102	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS95325	39,205	_
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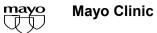
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
University of California—Los Angeles				
Research Related to Deafness and Communication Disorders	93.173	DC13256	\$ 213,042	\$ -
Cardiovascular Diseases Research	93.837	HL111437	90,493	_
Allergy and Infectious Diseases Research	93.855	AI121779	39,793	_
University of California—San Diego				
Aging Research	93.866	AG24904	726,404	_
Aging Research	93.866	AG10483	79,778	_
Aging Research	93.866	AG49810	70,761	_
University of California—San Francisco			•	
Mental Health Research Grants	93.242	MH98062	41,612	_
Cancer Cause and Prevention Research	93.393	CA181255	372,497	_
Cancer Cause and Prevention Research	93.393	CA207360	23,530	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92089	14,396	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS62835	1,295	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS99268	564	_
Allergy and Infectious Diseases Research	93.855	AI104347	74,219	_
Allergy and Infectious Diseases Research	93.855	AI110658	64,500	_
Allergy and Infectious Diseases Research	93.855	AI110498	70,614	_
Allergy and Infectious Diseases Research	93.855	AI113362	9,752	_
University of Chicago				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS104157	27,136	_
Allergy and Infectious Diseases Research	93.855	AI108682	24,861	_
University of Cincinnati				
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92076	1,250	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS95869	4,213	_
University of Colorado				
Food and Drug Administration Research	93.103	FD04086	34,891	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS63964	561	_
University of Florida				
Cardiovascular Diseases Research	93.837	HL127175	1,294	_
Lung Diseases Research	93.838	HL102033	21,937	_
Aging Research	93.866	AG46139	457,224	_
University of Illinois-Chicago				
Cancer Detection and Diagnosis Research	93.394	CA227699	14,249	-



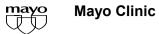
Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				-
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
University of Illinois at Urbana Champaign				
Trans-NIH Research Support	93.310	GM114838	\$ 286,665	\$ -
Cancer Detection and Diagnosis Research	93.394	CA196458	41,165	_
Cancer Detection and Diagnosis Research	93.394	CA197488	61,385	_
Cancer Detection and Diagnosis Research	93.394	CA216066	21,377	_
University of Iowa				
Cancer Centers Support Grants	93.397	CA097274	1,863,312	1,000
Allergy and Infectious Diseases Research	93.855	Al32402	35,636	_
Contract	93.RD	HHS-N-261-2013-00020I	206,816	_
University of Kansas Medical Center				
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK113111	137,614	_
University of Louisville Research Foundation			. , ,	
Human Genome Research	93.172	HG08988	37,429	_
University of Massachusetts			,	
Cancer Cause and Prevention Research	93.393	CA207369	975	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS88689	137,520	_
Contract	93.RD	HHS-N-261-2015-00029C	65,422	_
University of Miami	00.112	11110 TV 201 2010 000200	00,122	
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS92091	844	_
Extramural Research Programs in the Neurosciences and	00.000	11002001	011	
Neurological Disorders	93.853	NS084288	9,379	_
University of Michigan	00.000	11000 1200	0,070	
Cancer Cause and Prevention Research	93.393	CA191186	6,911	_
Cardiovascular Diseases Research	93.837	HL119443	17,529	_
Cardiovascular Diseases Research	93.837	HL133221	50,188	_
Blood Diseases and Resources Research	93.839	NMDP #1102	7,847	_
Blood Diseases and Resources Research	93.839	NMDP #1101	1,494	_
Blood Diseases and Resources Research	93.839	NMDP #13703	16,788	_
Diabetes, Digestive, and Kidney Diseases Extramural	30.000	THIND! II TO TOO	10,700	
Research	93.847	DK83912	107,388	_
Extramural Research Programs in the Neurosciences and	30.017	DINOGUE	101,000	
Neurological Disorders	93.853	NS94399	27,704	_
University of Minnesota	00.000	11001000	21,101	
Research on Healthcare Costs, Quality and Outcomes	93.226	HS25164	3,803	_
Research on Healthcare Costs, Quality and Outcomes	93.226	HS26379	2,420	_
Occupational Safety and Health Program	93.262	OH08434	9,196	_
Cancer Cause and Prevention Research	93.393	CA142714	13,092	
Cancer Biology Research	93.396	CA172986	30,528	_
Discovery and Applied Research for Technological	33.330	UA112300	30,520	-
Innovations to Improve Human Health	93.286	EB21027	11,307	
Cancer Centers Support Grants	93.200	CA210190	259,308	-
Cancer Centers Support Stants	33.331	OAZ 10 190	209,300	_



Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
University of Minnesota (continued)				
Cardiovascular Diseases Research	93.837	HL128790	\$ 782	\$ -
Cardiovascular Diseases Research	93.837	HL130496	19,996	_
Cardiovascular Diseases Research	93.837	HL136679	9,008	_
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR71439	6,779	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK101402	163,289	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK106130	6,263	_
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK98203	18,586	_
Extramural Research Programs in the Neurosciences and				
Neurological Disorders	93.853	NS62778	18,076	_
Extramural Research Programs in the Neurosciences and			-,-	
Neurological Disorders	93.853	NS77921	95,404	_
Extramural Research Programs in the Neurosciences and			,	
Neurological Disorders	93.853	NS80816	174,840	_
Extramural Research Programs in the Neurosciences and	33.333		,	
Neurological Disorders	93.853	NS88034	1,000	_
Extramural Research Programs in the Neurosciences and	33.333		.,000	
Neurological Disorders	93.853	NS96761	21,882	_
Allergy and Infectious Diseases Research	93.855	Al122742	101,171	_
Allergy and Infectious Diseases Research	93.855	AI134406	57,001	_
Biomedical Research and Research Training	93.859	GM118079	119,837	_
Biomedical Research and Research Training	83.859	GM120079	75,694	_
Child Health and Human Development Extramural Research	93.865	HD44763	49,809	_
Aging Research	93.866	AG43392	16,208	_
Aging Research	93.866	AG52564	2,326	_
Aging Research	93.866	AG59654	4,276	_
Medical Library Assistance	93.879	LM11972	109,319	_
University of Mississippi Medical Center	00.010	211111012	100,010	
Cardiovascular Diseases Research	93.837	HL96917	47,796	_
University of Nebraska	00.001	11200011	11,100	
Alcohol Research Programs	93.273	AA20735	359,114	_
University of New Mexico	00.210	70.25100	000,111	
Cancer Centers Support Grants	93.397	CA118100	176	_
University of New South Wales	00.001	0/11/01/00		
Cancer Cause and Prevention Research	93.393	CA172404	21,224	_
Aging Research	93.866	AG57531	9,223	_
University of North Carolina	00.000	7.007001	0,220	
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK109191	82,770	-
Diabetes, Digestive, and Kidney Diseases Extramural	00.077	DIVIOUINI	02,110	
Research	93.847	DK115575	64,429	_
Ποσομίσι	55.077	21110010	07,720	_



Facetar Ayan DevELOPMENT CLUSTER (continued) Number Award Number Expenditures to Subrecipients DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued) VINCENTIAL OF THEALTH AND HUMAN SERVICES (continued) VINCENTIAL OF THEALTH AND HUMAN SERVICES (continued) VINCENTIAL OF THEALTH AND HUMAN SERVICES (continued) University of Oklahoma Halbit Scanose Center University of Oklahoma Halbit Scanose Center S. 3.396 CA1703006 10.656 ————————————————————————————————————		CFDA	Federal/Pass-Through	Federal	Pass-Through
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued) PASS-THROUGH AWARDS (continued) University of Oklahoma Health Sciences Center 93.996	Federal Agency/Pass-Through Entity/CFDA or Project Description	Number	=	Expenditures	_
PASS-THROUGH AWARDS (continued) University of Okinthome Health Sciences Center 93.396 CA186338 \$ 36,541 \$ - Cancer Biology Research 93.396 CA170006 10,656 - Cancer Biology Research 93.396 CA203108 21,866 - Cancer Biology Research 93.397 HL135165 41,851 - Cancer Biology Research 93.397 HL135165 41,851 - Cancer Biology Research 93.397 HL135165 41,851 - Cancer Detection and Drug Administration Research 93.103 FD003516 23,853 - CA203108 21,474 - CA161749 158,987 - CA161749 158,987					· · · · · · · · · · · · · · · · · · ·
University of Oklahoma Health Sciences Center Cancer Biology Research 93.396 CA170006 10.666 - Cancer Biology Research 93.396 CA203108 21.866 - Cardioxecular Diseases Research 93.387 HL136165 - Cardioxecular Diseases Research 93.387 HL136165 - University of Pennsylvania Food and Drug Administration Research 93.394 CA161749 159.887 - Cancer Biology Research 93.394 CA161749 159.887 - Cancer Detection and Diagnosis Research 93.394 CA161749 159.887 - Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR64153 15,464 - Diabetes, Olgestive, and Kidney Diseases Research 93.847 Arthritis, Musculoskeletal and Skin Diseases Research 93.847 Arthritis, Musculoskeletal and Skin Diseases Research 93.847 Arthritis, Musculoskeletal and Skin Diseases Research 93.857 HL134015 57,686 - Cardiovascular Diseases Research 93.857 Lung Diseases Research 93.858 Atthritis, Musculoskeletal and Skin Diseases Research 93.868 AG46388 32.280 - Aging Research 93.866 AG46388 32.280 - Ajing Research 93.866 AG52943 127,903 - University of Pittsburgh National Center for Advancing Translational Sciences 93.857 FY2879 National Center for Advancing Translational Sciences 193.859 Blood Diseases Research 93.856 Al122899 Al12389 - Blood Diseases Research 93.856 Al122899 Al1989 - Child Health and Human Development Extramural Research 93.866 AG5443 Align Research Puniversity of Rochester Cancer Treatment Research 93.867 Child Health and Human Development Extramural Research 93.866 AG5443 Align Research 93.866 AG5443 Align Research Puniversity of Southern California Innovations to Improve Human Health 180.266 AG5443 AG18289 AG2443 AG182894 AG182895 AG24838 AG5437 AG182899 AG24838 AG64388 AG6	DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
Cancer Biology Research	PASS-THROUGH AWARDS (continued)				
Cancer Biology Research 93.396 CA170006 10.656 – Carorer Biology Research 93.396 CA203108 21,866 – Cardiovascular Diseases Research 93.397 HL135165 41,851 – University of Pennsylvania FOOd and Drug Administration Research 93.103 FD003516 23,853 – Cancer Detection and Diagnosis Research 93.846 AR5719 112,474 – Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR64153 15,464 – Diabetes, Digestive, and Kidney Diseases Extramural 93.847 DK100846 23,706 – Research 93.837 HL134905 31,850 – Cardiovascular Diseases Research 93.837 HL134905 31,850 – Lung Diseases Research 93.838 HL124015 57,686 – Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR66101 12,258 – Augin Research 93.846 AR66101 12,258 – Aging Research 93.866 <t< td=""><td>University of Oklahoma Health Sciences Center</td><td></td><td></td><td></td><td></td></t<>	University of Oklahoma Health Sciences Center				
Cancer Biology Research 93.396 CA203108 21,866 - Cardiovascular Diseases Research 93.837 HL155165 41,851 - University of Pennsylvania Food and Drug Administration Research 93.103 FD003516 23,853 - Cancer Detection and Diagnosis Research 93.846 AR57319 112,474 - Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR64153 15,464 - Diabetes, Digestive, and Kidney Diseases Research 93.847 DK100846 23,706 - Cardiovascular Diseases Research 93.837 HL134905 31,850 - Lung Diseases Research 93.8387 HL134905 31,850 - Lung Diseases Research 93.8383 HL134905 31,850 - Adring Research 93.866 AG48388 32,200 - Aging Research 93.866 AG48388 32,200 - Vision Research 93.867 EY22879 3,750 - University of Pittsburgh TR01857 12	Cancer Biology Research	93.396	CA186338	\$ 36,541	\$ -
Cardiovascular Diseases Research 93.837	Cancer Biology Research	93.396	CA170006	10,656	_
University of Pennsylvania Food and Drug Administration Research Cancer Detection and Diagnosis Research Arthrifis, Musculoskeletal and Skin Diseases Research Diabetes, Digestive, and Kidney Diseases Extramural Research Research Agnation Research Arthrifis, Musculoskeletal and Skin Diseases Research Agnation Research Research Arthrifis, Musculoskeletal and Skin Diseases Research Arthrifis, Musculoskeletal Arthrifis, Musculoskeletal and Skin Diseases Research Base Research Agnation Research Base Research Bas	Cancer Biology Research	93.396	CA203108	21,866	_
Food and Drug Administration Research	Cardiovascular Diseases Research	93.837	HL135165	41,851	_
Cancer Detection and Diagnosis Research 93.394 CA161749 158,987 - Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR57319 112,474 - Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR64153 15,464 - Diabetes, Digestive, and Kidney Diseases Extramural V V V 23,706 - Cardiovascular Diseases Research 93.837 HL134905 31,850 - Curiovascular Diseases Research 93.838 HL134015 57,686 - Arthritis, Musculoskeletal and Skin Diseases Research 93.866 AG681011 12,258 - Aging Research 93.866 AG52943 127,603 - Aging Research 93.866 AG52943 127,603 - Vision Research 93.867 EY22879 3,750 - University of Pittsburgh National Center for Advancing Translational Sciences 93.350 TR01857 120,241 - Lung Diseases Research 93.838 HL128954 10,846 -	University of Pennsylvania				
Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR67319 112,474 — Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR64153 15,464 — Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK100846 23,706 — Cardiovascular Diseases Research 93.837 HL134905 31,850 — Lung Diseases Research 93.838 HL134015 57,686 — Lung Diseases Research 93.838 HL134015 57,686 — Arthritis, Musculoskeletal and Skin Diseases Research 93.836 AR66101 12,258 — Aging Research 93.866 AG48388 32,280 — Aging Research 93.866 AG52943 127,603 — Vision Research 93.867 EY22879 3,750 — University of Pitsburgh National Center for Advancing Translational Sciences 93.850 TR01857 120,241 — Lung Diseases Research 93.838 HL128954 10,846 — Blood Diseases Research 93.839 HL13815 2,971 — Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK62864 5,749 — Allergy and Infectious Diseases Research 93.855 Al122269 2,498 — Child Health and Human Development Extramural Research 93.866 AG51406 229,959 — Contract 93.895 CA214890 13,357 — University of Southern California Innovations to Improve Human Health 93.286 EB26284 5,153 — Cancer Treatment Research 93.393 CA178535 43,390 — Cancer Cause and Prevention Research 93.393 CA178535 43,390 — Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 — Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 — Cancer Detection and Diagnosis Research 93.395 NS104095 192,572 — Aging Research 93.866 AG52350 10,711 —	Food and Drug Administration Research	93.103	FD003516	23,853	_
Arthritis, Musculoskeletal and Skin Diseases Research Diabetes, Digestive, and Kidney Diseases Extramural Research Cardiovascular Diseases Research 193,847 Cung Diseases Research 193,837 H.1134905 31,850 — Cardiovascular Diseases Research 193,838 H.1134015 57,686 — Arthritis, Musculoskeletal and Skin Diseases Research 193,846 Arging Research 193,846 Arging Research 193,866 AG48388 32,280 — Aging Research 193,866 AG48388 32,280 — Aging Research 193,867 Aging Research 193,867 Aging Research 193,867 Aging Research 193,867 Aging Research 193,887 Aging Research 193,888 H.1128954 10,846 — Blood Diseases Research 193,838 H.1128954 10,846 — Blood Diseases Research 193,887 Blood Diseases and Resources Research 193,887 Blood Diseases and Kidney Diseases Extramural Research 193,847 Allergy and Infectious Diseases Research 193,887 Allergy and Infectious Diseases Research 193,865 Al122369 2,498 — Aging Research 293,865 Aging Research 293,870 Aging Research 293,870 Aging Research 293,870 Aging Research 293,886 AG51406 228,959 — Contract 2010-inversity of Rothester Cancer Treatment Research 293,886 AG51406 228,959 — Contract 10-inversity of Southern California Innovations to Improve Human Health 293,286 Aging Research 293,393 CA17853 Aging Aging Aging Cancer Detection and Diagnosis Research 393,394 CA204352 Aging Research 493,866 AG52550 Aging Research 493,866 AG52550 AG1771 Aging Research 493,866 AG52550 AG7473 Aging Research 493,866 AG57437 Al1,783 Aging Research 493,866 AG57437 Al1,783	Cancer Detection and Diagnosis Research	93.394	CA161749	158,987	_
Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK100846 23,706 - Cardiovascular Diseases Research 93.837 HL134905 31,850 - Cardiovascular Diseases Research 93.838 HL134015 57,666 - Cardiovascular Diseases Research 93.838 HL134015 57,666 - Cardiovascular Diseases Research 93.866 AR66101 12,258 - Cardiovascular Diseases Research 93.866 AR66101 12,258 - Cardiovascular Diseases Research 93.866 AG48388 32,280 - Cardiovascular Diseases Research 93.866 AG52943 127,603 - Cardiovascular Diseases Research 93.867 E722879 3,750 - Cardiovascular Diseases Research 93.867 E722879 3,750 - Cardiovascular Diseases Research 93.838 HL128954 10,846 - Cardiovascular Diseases Research 93.839 HL133815 2,971 - Cardiovascular Diseases Research 93.839 HL133815 2,971 - Cardiovascular Diseases Diseases Research 93.847 DK82864 5,749 - Cardiovascular Diseases Research 93.855 A1122369 2,488 - Cardiovascular Diseases Research 93.866 AG51406 228,959 - Cardiovascular Diseases Research 93.866 AG51406 228,959 - Cardiovascular Diseases Research 93.866 AG51406 228,959 - Cardiovascular Diseases Diseases Programs Diseases Diseas	Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR57319	112,474	_
Research 93.847 DK100846 23,706 - Cardiovascular Diseases Research 93.837 HL134905 31,850 - Lung Diseases Research 93.838 HL134015 57,686 - Arthritis, Musculoskeletal and Skin Diseases Research 93.866 AG68101 12,258 - Aging Research 93.866 AG52943 127,603 - Aging Research 93.866 AG52943 127,603 - Vision Research 93.866 AG52943 127,603 - University of Pittsburgh Vision Research 93.838 HL128954 10,846 - Lung Diseases Research 93.838 HL128954 10,846 - Blood Diseases Research 93.839 HL133815 2,971 - Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK82864 5,749 - Allergy and Infectious Diseases Research 93.855 A1122369 2,498 - Child Health and Human Development Extramural Research 93.866	Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR64153	15,464	_
Cardiovascular Diseases Research 93.837 HL134905 31,850 - Lung Diseases Research 93.838 HL134015 57,686 - Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR66101 12,258 - Aging Research 93.866 AG52943 127,603 - Aging Research 93.866 AG52943 127,603 - Vision Research 93.867 EY22879 3,750 - University of Pittsburgh Vision Research 93.893 TR01857 120,241 - Lung Diseases Research 93.838 HL128954 10,846 - Blood Diseases and Resources Research 93.839 HL133815 2,971 - Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK82864 5,749 - Allergy and Infectious Diseases Research 93.855 Al122369 2,498 - Allergy and Infectious Diseases Research 93.865 HD86843 38,456 - Aging Research 93.892	Diabetes, Digestive, and Kidney Diseases Extramural				
Lung Diseases Research 93.838 HL134015 57,686 – Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR66101 12,258 – Aging Research 93.866 AG48388 32,280 – Aging Research 93.866 AG52943 127,603 – Vision Research 93.867 EV22879 3,750 – University of Pittsburgh Vision Research 93.808 TR01857 120,241 – Lung Diseases Research 93.838 HL128954 10,846 – Blood Diseases Research 93.839 HL133815 2,971 – Diabetes, Digestive, and Kidney Diseases Extramural Research 93.835 AI122369 2,498 – Research 93.847 DK82864 5,749 – Allergy and Infectious Diseases Research 93.855 Al122369 2,498 – Child Health and Human Development Extramural Research 93.865 HD86843 38,456 – Aging Research 93.395 CA214890	Research	93.847	DK100846	23,706	_
Arthritis, Musculoskeletal and Skin Diseases Research 93.846 AR66101 12,258 — Aging Research 93.866 AG48388 32,280 — Aging Research 93.866 AG52943 127,603 — Vision Research 93.867 EY22879 3,750 — University of Pittsburgh National Center for Advancing Translational Sciences 93.350 TR01857 120,241 — Lung Diseases Research 93.838 HL128954 10,846 — Blood Diseases and Resources Research 93.839 HL133815 2,971 — Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK62664 5,749 — Allergy and Infectious Diseases Research 93.855 Al122369 2,498 — Child Health and Human Development Extramural Research 93.866 AG51406 228,959 — Contract 93.870 HHS-N-272-2011-00041C 36,453 — Contract 93.870 HHS-N-272-2011-00041C 36,453 — University of Rochester Cancer Treatment Research 93.395 CA214890 13,357 — University of Southern California Innovations to Improve Human Health 93.266 EB26284 5,153 — Cancer Cause and Prevention Research 93.394 CA201352 6,048 — Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 — Cancer Detection and Diagnosis Research 93.394 CA201352 4,607 — Extramural Research Programs in the Neurosciences and Neurological Disorders 93.856 AG52350 10,711 — Aging Research 93.866 AG52350 10,711 — Aging Research 93.866 AG52350 10,711 — Aging Research 93.866 AG57437 41,783 —	Cardiovascular Diseases Research	93.837	HL134905	31,850	_
Aging Research 93.866 AG48388 32,280 - Aging Research 93.866 AG52943 127,603 - Vision Research 93.867 EY22879 3,750 - University of Pittsburgh VISION RESEARCH VISION RESEARCH VISION RESEARCH 120,241 - Lung Diseases Research 93.838 HL128954 10,846 - Blood Diseases and Resources Research 93.839 HL133815 2,971 - Diabetes, Digestive, and Kidney Diseases Extramural VISION RESEARCH VISION RESEARCH 2,971 - Allergy and Infectious Diseases Research 93.847 DK82864 5,749 - Allergy and Infectious Diseases Research 93.855 Al122369 2,498 - Child Health and Human Development Extramural Research 93.866 AG51406 228,959 - Contract 93.70 HHS-N-272-2011-00041C 36,53 - University of Rochester VISION RESEARCH 93.93 CA214890 13,357 - University of Southe	Lung Diseases Research	93.838	HL134015	57,686	_
Aging Research 93.866 AG52943 127,603 – Vision Research 93.867 EY22879 3,750 – University of Pittsburgh Vision Research 93.850 TR01857 120,241 – Lung Diseases Research 93.838 HL128954 10,846 – Blood Diseases Research 93.839 HL 133815 2,971 – Diabetes, Digestive, and Kidney Diseases Extramural Vision Research 83.847 DK82864 5,749 – Allergy and Infectious Diseases Research 93.855 A1122369 2,498 – Child Health and Human Development Extramural Research 93.865 HD86843 38,456 – Aging Research 93.870 HHS-N-272-2011-00041C 36,453 – University of Rochester Cancer Treatment Research 93.95 CA214890 13,357 – University of Southern California Innovations to Improve Human Health 93.286 EB26284 5,153 – Cancer Cause and Prevention Research 93.393 CA178535 43,390 <td>Arthritis, Musculoskeletal and Skin Diseases Research</td> <td>93.846</td> <td>AR66101</td> <td>12,258</td> <td>_</td>	Arthritis, Musculoskeletal and Skin Diseases Research	93.846	AR66101	12,258	_
Vision Research 93.867 EY22879 3,750 – University of Pittsburgh National Center for Advancing Translational Sciences 93.350 TR01857 120,241 – Lung Diseases Research 93.838 HL128954 10,846 – Blood Diseases and Resources Research 93.839 HL133815 2,971 – Diabetes, Digestive, and Kidney Diseases Extramural Variable Science Variable Sc	Aging Research	93.866	AG48388	32,280	_
University of Pittsburgh National Center for Advancing Translational Sciences 93.350 TR01857 120,241 – Lung Diseases Research 93.838 HL128954 10,846 – Blood Diseases Research Resources Research 93.839 HL133815 2,971 – Diabetes, Digestive, and Kidney Diseases Extramural 8 8 HL123969 2,971 – Allergy and Infectious Diseases Research 93.855 Al122369 2,498 – Child Health and Human Development Extramural Research 93.865 HD86843 38,456 – Aging Research 93.866 AG51406 228,959 – Contract 93.87 HHS-N-272-2011-00041C 36,453 – University of Rochester 8 CA214890 13,357 – Cancer Treatment Research 93.99 CA214890 13,357 – University of Southern California 8 10 10 10 10 10 10 10 10 10 10 10 10 10 10 </td <td>Aging Research</td> <td>93.866</td> <td>AG52943</td> <td>127,603</td> <td>_</td>	Aging Research	93.866	AG52943	127,603	_
National Center for Advancing Translational Sciences 93.350 TR01857 120,241 – Lung Diseases Research 93.838 HL128954 10,846 – Blood Diseases and Resources Research 93.839 HL133815 2,971 – Diabetes, Digestive, and Kidney Diseases Extramural Very Company Very Company – Research 93.847 DK82864 5,749 – Allergy and Infectious Diseases Research 93.855 Al122369 2,498 – Child Health and Human Development Extramural Research 93.865 HD86843 38,456 – Aging Research 93.806 AG51406 228,959 – Contract 93.870 HHS-N-272-2011-00041C 36,453 – University of Rochester Very Cancer Treatment Research 93.395 CA214890 13,357 – University of Southern California Very Cancer Treatment Research 93.393 CA178535 43,390 – Cancer Cause and Prevention Research 93.394 CA201352 6,048 –	Vision Research	93.867	EY22879	3,750	_
Lung Diseases Research 93.838 HL128954 10,846 – Blood Diseases and Resources Research 93.839 HL133815 2,971 – Diabetes, Digestive, and Kidney Diseases Extramural 83.847 DK82864 5,749 – Research 93.855 Al122369 2,498 – Allergy and Infectious Diseases Research 93.855 Al122369 2,498 – Child Health and Human Development Extramural Research 93.856 HD86843 38,456 – Aging Research 93.866 AG51406 228,959 – Contract 93.87 HHS-N-272-2011-00041C 36,453 – University of Rochester 83.99 CA214890 13,357 – University of Southern California 93.395 CA214890 13,357 – Innovations to Improve Human Health 93.286 EB26284 5,153 – Cancer Cause and Prevention Research 93.393 CA178635 43,390 – Cancer Detection and Diagnosis Research 93.94 CA201352	University of Pittsburgh				
Blood Diseases and Resources Research 93.839 HL133815 2,971 - Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK82864 5,749 - Allergy and Infectious Diseases Research 93.855 Al122369 2,498 - Child Health and Human Development Extramural Research 93.865 HD86843 38,456 - Aging Research 93.866 AG51406 228,959 - Aging Research 93.866 AG51406 228,959 - Aging Research 93.895 CA214890 13,357 - Aging Research 20,395 CA214890 13,357 - Aging Research 20,395 CA214890 CA178535 CA214890	National Center for Advancing Translational Sciences	93.350	TR01857	120,241	_
Diabetes, Digestive, and Kidney Diseases Extramural Research 93.847 DK82864 5,749 - Allergy and Infectious Diseases Research 93.855 Al122369 2,498 - Child Health and Human Development Extramural Research 93.865 HD86843 38,456 - Aging Research 93.866 AG51406 228,959 - Contract 93.870 HHS-N-272-2011-00041C 36,453 - University of Rochester 70	Lung Diseases Research	93.838	HL128954	10,846	_
Research 93.847 DK82864 5,749 – Allergy and Infectious Diseases Research 93.855 Al122369 2,498 – Child Health and Human Development Extramural Research 93.865 HD86843 38,456 – Aging Research 93.866 AG51406 228,959 – Contract 93.RD HHS-N-272-2011-00041C 36,453 – University of Rochester Value Valu	Blood Diseases and Resources Research	93.839	HL133815	2,971	_
Allergy and Infectious Diseases Research	Diabetes, Digestive, and Kidney Diseases Extramural				
Child Health and Human Development Extramural Research 93.865 HD86843 38,456 – Aging Research 93.866 AG51406 228,959 – Contract 93.RD HHS-N-272-2011-00041C 36,453 – University of Rochester Variable Variable – Cancer Treatment Research 93.395 CA214890 13,357 – University of Southern California –	Research	93.847	DK82864	5,749	_
Aging Research 93.866 AG51406 228,959 – Contract 93.RD HHS-N-272-2011-00041C 36,453 – University of Rochester University of Southern Research 93.395 CA214890 13,357 – University of Southern California Innovations to Improve Human Health 93.286 EB26284 5,153 – Cancer Cause and Prevention Research 93.393 CA178535 43,390 – Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 – Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 – Extramural Research Programs in the Neurosciences and NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	Allergy and Infectious Diseases Research	93.855	Al122369	2,498	_
Contract 93.RD HHS-N-272-2011-00041C 36,453 – University of Rochester 93.395 CA214890 13,357 – Cancer Treatment Research 93.395 CA214890 13,357 – University of Southern California Innovations to Improve Human Health 93.286 EB26284 5,153 – Cancer Cause and Prevention Research 93.393 CA178535 43,390 – Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 – Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 – Extramural Research Programs in the Neurosciences and 93.853 NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	Child Health and Human Development Extramural Research	93.865	HD86843	38,456	_
University of Rochester 93.395 CA214890 13,357 – University of Southern California Innovations to Improve Human Health 93.286 EB26284 5,153 – Cancer Cause and Prevention Research 93.393 CA178535 43,390 – Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 – Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 – Extramural Research Programs in the Neurosciences and Neurological Disorders 93.853 NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	Aging Research	93.866	AG51406	228,959	_
Cancer Treatment Research 93.395 CA214890 13,357 - University of Southern California Innovations to Improve Human Health 93.286 EB26284 5,153 - Cancer Cause and Prevention Research 93.393 CA178535 43,390 - Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 - Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 - Extramural Research Programs in the Neurosciences and Neurological Disorders 93.853 NS104095 192,572 - Aging Research 93.866 AG38791 68,798 - Aging Research 93.866 AG52350 10,711 - Aging Research 93.866 AG57437 41,783 -	Contract	93.RD	HHS-N-272-2011-00041C	36,453	_
University of Southern California Innovations to Improve Human Health 93.286 EB26284 5,153 – Cancer Cause and Prevention Research 93.393 CA178535 43,390 – Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 – Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 – Extramural Research Programs in the Neurosciences and 93.853 NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	University of Rochester				
Innovations to Improve Human Health 93.286 EB26284 5,153 - Cancer Cause and Prevention Research 93.393 CA178535 43,390 - Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 - Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 - Extramural Research Programs in the Neurosciences and Neurological Disorders 93.853 NS104095 192,572 - Aging Research 93.866 AG38791 68,798 - Aging Research 93.866 AG52350 10,711 - Aging Research 93.866 AG57437 41,783 -	Cancer Treatment Research	93.395	CA214890	13,357	-
Cancer Cause and Prevention Research 93.393 CA178535 43,390 – Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 – Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 – Extramural Research Programs in the Neurosciences and 83.853 NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	University of Southern California				
Cancer Detection and Diagnosis Research 93.394 CA201352 6,048 – Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 – Extramural Research Programs in the Neurosciences and Neurological Disorders 93.853 NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	Innovations to Improve Human Health	93.286	EB26284	5,153	-
Cancer Detection and Diagnosis Research 93.394 CA204352 4,607 – Extramural Research Programs in the Neurosciences and Neurological Disorders 93.853 NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	Cancer Cause and Prevention Research	93.393	CA178535	43,390	-
Extramural Research Programs in the Neurosciences and Neurological Disorders 93.853 NS104095 192,572 - Aging Research 93.866 AG38791 68,798 - Aging Research 93.866 AG52350 10,711 - Aging Research 93.866 AG57437 41,783 -	Cancer Detection and Diagnosis Research	93.394	CA201352	6,048	-
Neurological Disorders 93.853 NS104095 192,572 – Aging Research 93.866 AG38791 68,798 – Aging Research 93.866 AG52350 10,711 – Aging Research 93.866 AG57437 41,783 –	Cancer Detection and Diagnosis Research	93.394	CA204352	4,607	_
Aging Research 93.866 AG38791 68,798 - Aging Research 93.866 AG52350 10,711 - Aging Research 93.866 AG57437 41,783 -	Extramural Research Programs in the Neurosciences and				
Aging Research 93.866 AG52350 10,711 - Aging Research 93.866 AG57437 41,783 -	Neurological Disorders	93.853	NS104095	192,572	_
Aging Research 93.866 AG57437 41,783 –	Aging Research	93.866	AG38791	68,798	_
	Aging Research	93.866	AG52350	10,711	_
Contract 93.RD HHS-F-223-2014-00115C 42,547 –	Aging Research	93.866	AG57437	41,783	_
	Contract	93.RD	HHS-F-223-2014-00115C	42,547	_



ederal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
RESEARCH AND DEVELOPMENT CLUSTER (continued)				
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)				
PASS-THROUGH AWARDS (continued)				
University of Tennessee				
Family Smoking Prevention and Tobacco Control Act Regulatory				
Research	93.077	DA37273	\$ 65,987	\$ -
Lung Diseases Research	93.838	HL123978	25,798	
University of Texas Health Science Center				
Cancer Biology Research	93.396	CA194215	142,704	
Medical Library Assistance	93.879	LM11829	93,276	
University of Texas M.D. Anderson Cancer Center			•	
Cancer Cause and Prevention Research	93.393	CA186566	239,620	
Cancer Cause and Prevention Research	93.393	CA222253	39,051	
Diabetes, Digestive, and Kidney Diseases Extramural			,	
Research	93.847	DK108328	43,447	
Contract	93.RD	HHS-N-261-2012-00034I	18,896	
University of Texas Southwestern Medical Center			,	
Cancer Detection and Diagnosis Research	93.394	CA86402	7,212	
Diabetes, Digestive, and Kidney Diseases Extramural	00.001	0/100/102	7,2.2	
Research	93.847	DK107733	190,918	
University of Utah	00.017	BRIOTTOO	100,010	
Cancer Cause and Prevention Research	93.393	CA217130	43,175	
University of Virginia	30.030	0/12/1/100	40,170	
Diabetes, Digestive, and Kidney Diseases Extramural				
Research	93.847	DK108483	219,965	
Diabetes, Digestive, and Kidney Diseases Extramural	33.047	DI(100 1 03	213,303	
Research	93.847	DK29953	26,862	
Diabetes, Digestive, and Kidney Diseases Extramural	93.047	DR29900	20,002	
Research	93.847	DK85516	70,363	
	93.047	DK00010	70,303	
Extramural Research Programs in the Neurosciences and	93.853	NS69498	25.266	
Neurological Disorders	93.865		25,266	
Child Health and Human Development Extramural Research University of Washington	93.003	HD87413	31,472	
•	93.310	AR66795	36,517	
Trans-NIH Research Support			,	
Cardiovascular Diseases Research	93.837	HL120393 AG16976	25,773	
Aging Research Contract	93.866		44,034	
	93.RD	HHS-N-261-2011-00099C	150	
University of Wisconsin	02.204	0.4400000	F0 70F	
Cancer Detection and Diagnosis Research	93.394	CA199996	52,705	
University of Wisconsin-Madison				
Diabetes, Digestive, and Kidney Diseases Extramural	00.047	DIVOCCO	450.045	
Research	93.847	DK88925	153,815	
USF Morisani College of Medicine	00.00-	1100-010		
Child Health and Human Development Extramural Research	93.865	HD87213	44,979	



Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients	
RESEARCH AND DEVELOPMENT CLUSTER (continued)	Number	Awara Hamber	Experienteres	to oubiccipicitis	
DEPARTMENT OF HEALTH AND HUMAN SERVICES (continued)					
PASS-THROUGH AWARDS (continued)					
Vanderbilt University					
Lung Diseases Research	93.838	HL108800	\$ 17,410	\$ -	
Extramural Research Programs in the Neurosciences and	00.000	11210000	Ψ,σ	•	
Neurological Disorders	93.853	NS65736	274,451	_	
Vibe Pharmaceuticals	00.000	11000100	21 1, 10 1		
Aging Research	93.866	AG50332	1,768	_	
Virginia Commonwealth University	00.000	7100002	1,700		
Research on Healthcare Costs, Quality and Outcomes	93.226	HS25412	19,792	_	
Vivita Technologies, Inc.	00.220	11020112	10,702		
Cardiovascular Diseases Research	93.837	HL136003	6,608	_	
Vyriad	00.007	11210000	0,000		
Cancer Treatment Research	93.395	CA221461	25,589	_	
Wake Forest University Health Sciences	00.000	0/1221101	20,000		
Aging Research	93.866	AG55606	42,617	_	
Washington University in St. Louis	00.000	7100000	12,017		
Cancer Detection and Diagnosis Research	93.394	CA196171	360,948	_	
Extramural Research Programs in the Neurosciences and	00.001	0/(1001/1	000,040		
Neurological Disorders	93.853	NS74969	408,542	_	
Aging Research	93.866	AG32438	273,904	_	
Aging Research	93.866	AG46179	70,273	_	
Aging Research	93.866	AG56296	15,878	_	
Aging Research	93.866	AG56639	16,055	_	
Westat	33.000	7100000	10,000		
Contract	93.RD	WESTAT-6048-S24	22,700	_	
Xyken, LLC	30.11	WEOTAT 0040 024	22,700		
Aging Research	93.866	AG56172	7,900	_	
Aging Research	93.866	AG58269	12,164	_	
Yale University	33.000	71000200	12,104		
Food and Drug Administration Research	93.103	FD05938	673,964	_	
Mental Health Research Grants	93.242	MH106876	198,171		
Mental Health Research Grants	93.242	MH109648	133,666	_	
Cancer Cause and Prevention Research	93.393	CA118553	46,468	_	
Cancer Cause and Prevention Research	93.393	CA169141	61,242		
Cardiovascular Diseases Research	93.837	HL125918	65,023	_	
Contract	93.RD	HHS-F-223-2017-10167C	70,790	_	
Subtotal Pass-Through Awards	30.IND	111101 220 2017 101070	31,065,048	132,821	
·			,,,,,,,	- ,	
Total Department of Health and Human Services			308,639,040	33,521,269	
Total Research and Development Cluster			328,030,484	34,665,604	



Federal Agency/Pass-Through Entity/CFDA or Project Description	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Pass-Through to Subrecipients
STUDENT FINANCIAL ASSISTANCE CLUSTER				
DEPARTMENT OF EDUCATION				
DIRECT AWARDS				
Office of Federal Student Aid				
Federal Pell Grant Program (84.063)				
Pell Grant Program	84.063		\$ 60,087	\$ -
Federal Direct Student Loans (84.268)				
Federal Direct Student Loans	84.268		10,560,286	-
Total Student Financial Assistance Cluster			10,620,373	-
OTHER PROGRAMS				
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT DIRECT AWARDS				
Supportive Housing for the Elderly, Section 202 Direct Loan Housing Voucher Cluster	14.157		862,391	-
Section 8 Housing Choice Vouchers	14.871		177,210	_
Total Housing Voucher Cluster			177,210	-
Subtotal Direct Awards			1,039,601	-
Total Department of Housing and Urban Development			1,039,601	-
DEPARTMENT OF JUSTICE PASS-THROUGH AWARD				
Minnesota Department of Public Safety				
Crime Victim Assistance	16.575	None	121,237	-
Subtotal Pass-Through Award			121,237	-
Total Department of Justice			121,237	_
DEPARTMENT OF HEALTH AND HUMAN SERVICES				
DIRECT AWARD				
Office of the Surgeon General	02.1104		007.450	
Military Health Professions Scholarships	93.U01		237,150	
Subtotal Direct Award			237,150	-
PASS-THROUGH AWARD				
Health Resources and Services Administration				
Minnesota Department of Health				
Small Rural Hospital Improvement Grant Program	93.301	None	25,200	
Subtotal Pass-Through Award			25,200	
Total Department of Health and Human Services			262,350	
Total Other Programs			1,423,188	
TOTAL EXPENDITURES OF FEDERAL AWARDS			\$ 340,074,045	\$ 34,665,604



Schedule of Expenditures of Florida State Financial Assistance Year Ended December 31, 2018

e of Florida Agency/Pass-Through Entity/CSFA Description	CSFA Number	Contract/Grant/ Subaward Number	State Expenditures	Pass-Through to Subrecipient	
TATE OF FLORIDA					
Department of Elder Affairs					
Direct Awards					
Alzheimer Model Day Care, Memory Disorder Clinics, and					
Alzheimer Special Projects	65.002	XZ708	\$ 203,606	\$	
Alzheimer Model Day Care, Memory Disorder Clinics, and			,	•	
Alzheimer Special Projects	65.002	XZ608	6,526		
Subtotal Direct Awards	00.002	7.2000	210,132		
Pass-Through Award					
Mount Sinai Medical Center of Florida, Inc.					
Alzheimer Model Day Care, Memory Disorder Clinics, and					
Alzheimer Special Projects	65.002	XZ707	14,630		
Subtotal Pass-Through Award	00.002	ALIVI	14,630		
Total Department of Elder Affairs			224,762		
Total Department of Elder Allans			224,702		
Department of Health					
Direct Awards					
Bankhead-Coley Cancer Research Program	64.078	6BC05	296,903		
Bankhead-Coley Cancer Research Program	64.078	5BC02	335,694		
Bankhead-Coley Cancer Research Program	64.078	8BC01	93,556		
Endowed Chair for Cancer Research	64.130	MOG07	949,179		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	6AZ12	42,396	16,	
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	6AZ01	5,303		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	6AZ13	(4,694)		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	6AZ06	45,134		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ08	34,613		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ22	59,874		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ21	32,061		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ17	118,473	30,	
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ15	58,249		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ07	188,145		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ05	115,493		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	8AZ06	46,016		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	8AZ07	55,021		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	8AZ08	24,922		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	8AZ09	55,999		
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	8AZ10	99,775		
Subtotal Direct Awards			2,652,112	46,	
Pass-Through Award				<u>`</u>	
University of Florida					
Ed and Ethel Moore Alzheimer's Disease Research Program	64.135	7AZ01	73,878		
Subtotal Pass-Through Award			73,878		
Total Department of Health			2,725,990	46,	
4 IF IV (FI 04 4 FI 112 14			A 0000 ===	A :=	
otal Expenditures of Florida State Financial Assistance ree accompanying notes to schedules of expenditures of federal awards and F			\$ 2,950,752	\$ 46,3	

Notes to Schedules of Expenditures of Federal Awards and Florida State Financial Assistance

December 31, 2018

1. Basis of Presentation

The accompanying schedules of expenditures of federal awards and Florida state financial assistance (the Schedules) include the federal and Florida state grant activity of Mayo Clinic under programs of the federal and Florida state government for the year ended December 31, 2018. The information in the Schedules is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (the Uniform Guidance), and Chapter 10.650, Rules of the Auditor General of the State of Florida. Because the Schedules only present a selected portion of the operations of Mayo Clinic, they are not intended to, and do not, present the financial position, changes in net assets, or cash flows of Mayo Clinic.

2. Summary of Significant Accounting Policies

Expenditures reported in the Schedules are reported on the cash basis of accounting. Under the cash basis, expenditures are recognized when paid rather than when the obligation is incurred. Such expenditures are reported following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts reported on the Schedules represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years.

Mayo Clinic has elected to use the 10 percent de minimis indirect cost rate, as allowed under the Uniform Guidance, on expenditures of awards received by certain subsidiaries. Other subsidiaries have federally approved indirect cost rates and have not elected to use the 10 percent de minimis indirect cost rate.

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Notes to Schedules of Expenditures of Federal Awards and Florida State Financial Assistance (continued)

3. Federal Direct Loans

The Supportive Housing for the Elderly, Section 202 Direct Loan (CFDA #14.157) is considered a federal award until the outstanding balance is paid in full. At December 31, 2018, Luther Lakeside Apartments, Inc.'s outstanding balance is \$511,616 and the Bloomer Lakeview's outstanding balance is \$350,775.

During the year, Mayo Clinic expended \$10,560,286 in Federal Direct Student Loans (CFDA #84.268), which includes Direct Stafford Loan and Parent's Loan for Undergraduate Students from the federal government. The federal government is responsible for billings and collections of the loans. Mayo Clinic assists the federal government by processing the applications and applying funds to student accounts from the federal government. Since this program is administered by the federal government, new loans made in the fiscal year ended December 31, 2018, related to Federal Direct Student Loans are considered current year federal expenditures, whereas the outstanding loan balances are not.

1903-3107433





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Report of Independent Auditors on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements

Performed in Accordance With *Government Auditing Standards*

Board of Trustees, Chief Executive Officer and President, and Chief Financial Officer Mayo Clinic

We have audited, in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of Mayo Clinic, which comprise the consolidated statement of financial position as of December 31, 2018, and the related consolidated statements of activities, and cash flows for the year then ended, and the related notes to the consolidated financial statements, and have issued our report thereon dated February 19, 2019.

Internal Control Over Financial Reporting

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

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

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



Compliance and Other Matters

As part of obtaining reasonable assurance about whether Mayo Clinic's financial statements are free of 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 determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

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

Ernst & Young LLP

February 19, 2019

1903-3107433



Ernst & Young LLP Suite 1400 220 South Sixth Street Minneapolis, MN 55402-4509 Tel: +1 612 343 1000 ev.com

Report of Independent Auditors on Compliance for Each Major Federal Program and State Financial Assistance Project and Report on Internal Control Over Compliance Required by the Uniform Guidance and Chapter 10.650, Rules of the Auditor General of the State of Florida

Board of Trustees, Chief Executive Officer and President, and Chief Financial Officer Mayo Clinic

Report on Compliance for Each Major Federal Program and State Project

We have audited Mayo Clinic's compliance with the types of compliance requirements described in the U.S. Office of Management and Budget (OMB) Compliance Supplement and the requirements described in the Florida Department of Financial Services' State Projects Compliance Supplement that could have a direct and material effect on each of Mayo Clinic's major federal programs and state financial assistance projects for the year ended December 31, 2018. Mayo Clinic's major federal programs and state financial assistance projects are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

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

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for each of Mayo Clinic's major federal programs and state financial assistance projects based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; 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); and Chapter 10.650, *Rules of the Auditor General of the State of Florida*. Those standards, the Uniform Guidance, and Chapter 10.650, *Rules of the Auditor General of the State of Florida*, require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program or state project occurred. An audit



includes examining, on a test basis, evidence about Mayo Clinic's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program and state financial assistance project. However, our audit does not provide a legal determination of Mayo Clinic's compliance.

Opinion on Each Major Federal Program and State Project

In our opinion, Mayo Clinic complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs and state financial assistance projects for the year ended December 31, 2018.

Report on Internal Control Over Compliance

Management of Mayo Clinic is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered Mayo Clinic's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program and state financial assistance project to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and state financial assistance project and to test and report on internal control over compliance in accordance with the Uniform Guidance and Chapter 10.650, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of Mayo Clinic's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program or state financial assistance project on a timely basis. A material weakness in internal control over compliance is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program or state financial assistance project 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 or state financial assistance project that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.



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

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance and Chapter 10.650, *Rules of the Auditor General of the State of Florida*. Accordingly, this report is not suitable for any other purpose.

Ernst + Young LLP

April 22, 2019

Schedule of Findings and Questioned Costs

For the Year Ended December 31, 2018

Section I – Summary of Auditor's Results

Financial Statements

Type of report the auditor issued on whether the financial statements audited were prepared in accordance with GAAP:	Unmodified			
Internal control over financial reporting: Material weakness(es) identified? Significant deficiency(ies) identified? Noncompliance material to financial statements noted?	Yes Yes Yes	X X	No None Reported No	
Federal Awards				
Internal control over major federal programs: Material weakness(es) identified? Significant deficiency(ies) identified?	Yes Yes	X X	No None Reported	
Type of auditor's report issued on compliance for major federal programs:	Ţ	Jnmodi	fied	
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	Yes	X	No	

Schedule of Findings and Questioned Costs (continued)

Section I – Summary of Auditor's Results (continued)

Identification of major federal programs:

CFDA Numbers	Name of Federal Program or Cluster		
Multiple 84.063 and 84.268	Research and Development Cluster Student Financial Assistance Cluster		
Dollar threshold used to distinguish between Type A and Type B programs:	\$ 3,000,000		
Auditee qualified as low-risk auditee?	X Yes No		
Florida State Financial Assistance Projects			
Internal control over major state financial assistance projects:			
Material weakness(es) identified?	Yes X No		
Significant deficiency(ies) identified?	Yes X None Reported		
Type of auditor's report issued on compliance for major state financial assistance projects:	Unmodified		
Any audit findings disclosed that are required to be reported in accordance with Chapter 10.650, Rules of the Auditor General of the State of Florida?	Yes X_No		
Identification of major state projects:			
State CSFA Numbers	Name of State Project		
64.078	Bankhead-Coley Cancer Research Program		
64.135	Ed and Ethel Moore Alzheimer's Disease Research Program		
Dollar threshold used to distinguish between			
Type A and Type B programs:	\$ 300,000		

Schedule of Findings and Questioned Costs (continued)

Section II – Financial Statement Findings

None identified.

Schedule of Findings and Questioned Costs (continued)

Section III – Federal Award Findings and Questioned Costs Section

None identified.

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Summary Schedule of Prior Audit Findings

Federal Award Findings and Questioned Costs - Years Ended December 31, 2017 and 2016

None identified.

Financial Statement Findings - Year Ended December 31, 2017

None identified.

Financial Statement Findings - Year Ended December 31, 2016

Finding 2016-001

Finding

Management did not accurately recognize a loss on assets held for sale related to the anticipated sale of Mayo Clinic Health System-Waycross (Waycross).

Current Year Status

The corrective action was completed as of March 31, 2017