Woods Hole Oceanographic Institution

Financial Statements
December 31, 2018
(With Summarized Financial Information as of and for the Year Ended December 31, 2017)

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Report of Independent Auditors

To the Board of Trustees of
Woods Hole Oceanographic Institution

We have audited the accompanying financial statements of Woods Hole Oceanographic Institution (the "Institution"), which comprise the statement of financial position as of December 31, 2018, and the related statements of activities and of cash flows for the year then ended.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

Our responsibility is to express an opinion on the financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from 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 our 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, we consider internal control relevant to the Institution'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 Institution'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 financial position of Woods Hole Oceanographic Institution as of December 31, 2018, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 2 to the financial statements, the Institution changed the manner in which it presents net assets and reports certain aspects of its financial statements as a not-for-profit entity in 2018. Our opinion is not modified with respect to this matter.

Other Matter

We previously audited the statement of financial position as of December 31, 2017, and the related statements of activities and of cash flows for the year then ended (not presented herein), and in our report dated July 12, 2018, we expressed an unmodified opinion on those financial statements. In our opinion, the information set forth in the accompanying summarized financial information as of December 31, 2017 and for the year then ended is consistent, in all material respects, with the audited financial statements from which it has been derived.

PricewaterhouseCoopers LLP

Boston, Massachusetts
July 11, 2019

Woods Hole Oceanographic Institution
Statements of Financial Position
December 31, 2018
(With Summarized Financial Information as of December 31, 2017)

	2018	2017
Assets		
Cash and cash equivalents, unrestricted	$ 6,724,602	$ 12,094,856
Cash and cash equivalents, restricted	23,959,968	11,684,068
Reimbursable costs and fees		
Billed (net of allowance for doubtful accounts of $84,500 for 2018 and $92,441 for 2017)	3,996,652	8,806,460
Unbilled	11,363,834	14,002,297
Receivable for investments sold	20,353,422	20,138,119
Other receivables	1,965,029	609,173
Inventory	3,320,626	2,190,955
Deferred charges and prepaid expenses	1,554,387	1,002,224
Deposits with trustees for construction	34,407,701	-
Deferred fixed rate variance (Note 7)	1,520,599	4,898,227
Pledges receivable, net (Note 5)	2,035,652	6,317,664
Investments designated for retiree and active medical plans (Note 10)	10,037,698	11,897,396
Investments, pooled (Note 3)	397,183,502	417,571,845
Other assets	922,535	1,700,004
	519,346,207	512,913,288
Property, plant and equipment		
Land, buildings and improvements	177,246,269	177,800,480
Vessels and dock facilities	11,837,015	10,504,348
Laboratory and other equipment	42,375,067	41,819,917
Construction in process	2,147,229	2,314,927
	233,605,580	232,439,672
Accumulated depreciation	(145,679,973)	(147,413,024)
Net property, plant and equipment	87,925,607	85,026,648
Contributions receivable from remainder trusts, long-term, net (Note 6)	834,582	930,455
Total assets	$ 608,106,396	$ 598,870,391
Liabilities		
Line of credit (Note 8)	$ 7,000,000	$ 11,000,000
Accounts payable and other liabilities (Note 8)	22,846,839	25,473,116
Accrued payroll and related liabilities	8,509,223	7,696,713
Deferred revenue and refundable advances	17,660,883	12,813,934
Accrued postretirement liability (Note 10)	28,609,419	33,620,893
Accrued pension liability (Note 9)	101,025,538	114,700,397
Bonds payable (Note 8)	85,390,159	50,517,761
Total liabilities	271,042,061	255,822,814
Net assets		
Without donor restrictions	(13,556,201)	(40,884,887)
With donor restrictions	350,620,536	383,932,464
Total net assets	337,064,335	343,047,577
Total liabilities and net assets	$ 608,106,396	$ 598,870,391

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

Woods Hole Oceanographic Institution
Statements of Activities
Years Ended December 31, 2018
(With Summarized Financial Information for the Year Ended December 31, 2017)

	Without Donor Restrictions	With Donor Restrictions	2018	2017
Revenues				
Sponsored research				
Government	$ 101,968,861	$ -	$ 101,968,861	$ 85,142,995
Ships and subs operations	29,198,276	-	29,198,276	29,020,161
Subcontracts and nongovernment	47,529,593	7,836,928	55,366,521	62,223,885
Sponsored research assets released to operations	5,052,361	(5,052,361)	-	-
Fixed price awards	689,947	-	689,947	744,996
Education				
Joint program income	4,696,516	-	4,696,516	4,080,671
Endowment income	-	8,849,705	8,849,705	8,626,732
Education funds released from restriction	8,069,021	(8,069,021)	-	-
Contributions and gifts	11,137,998	4,336,478	15,474,476	20,510,120
Contributions in kind	284,059	-	284,059	2,823,247
Investment return designated for current operations	3,449,367	-	3,449,367	3,484,132
Releases from restrictions	1,906,682	(2,749,353)	(842,671)	(375,000)
Charter Income	1,470,529	-	1,470,529	4,965,883
Fees	669,547	-	669,547	1,267,993
Rental income	552,835	-	552,835	545,503
Communication and publications	241,456	-	241,456	234,754
Other	1,529,013	-	1,529,013	4,303,394
Total revenues	218,446,061	5,152,376	223,598,437	227,599,466
Expenses				
Research	142,642,524	-	142,642,524	137,104,560
Marine operations	11,908,291	-	11,908,291	8,189,055
Academic programs	10,991,971	-	10,991,971	10,289,971
Other Institution activities	7,717,885	-	7,717,885	8,953,788
Unsponsored research	22,002,853	-	22,002,853	26,851,333
Ships and submersibles	29,198,275	-	29,198,275	29,020,161
Total expenses	224,461,799	-	224,461,799	220,408,868
Change in net assets from operating activities	(6,015,738)	5,152,376	(863,362)	7,190,598
Nonoperating revenue and expenses				
Investment return greater than amounts designated for sponsored research, education and current operations	(3,996,164)	(18,640,914)	(22,637,078)	19,694,457
Return on investments for retiree and active medical plans	(941,856)	-	(941,856)	1,680,496
Net realized/unrealized gains (losses) on interest rate swap	416,902	-	416,902	(474,338)
Change in split interest agreements	(5,356)	(163,671)	(169,027)	126,820
Other nonoperating expenses	(69,876)		(69,876)	(111,909)
Donor reclassification to ship operations	-	(5,000)	(5,000)	(15,000)
Gain on termination of Supplemental Employee Retirement Plan	-	-	-	11,420,679
Gain on sale of investment	1,300,000	-	1,300,000	-
Loss on refinancing of Series 2008 Bonds	(782,436)	-	(782,436)	-
Net periodic benefit cost	(5,877,988)	-	(5,877,988)	(4,664,409)
Pension and post-retirement related changes other than net periodic benefit costs (Note 9)	23,646,479	-	23,646,479	(7,331,410)
Removal of previously imposed restrictions	19,654,719	(19,654,719)	-	-
Change in net assets from nonoperating activities	33,344,424	(38,464,304)	(5,119,880)	20,325,386
Total change in net assets	27,328,686	(33,311,928)	(5,983,242)	27,515,984
Net assets at				
Beginning of year	(40,884,887)	383,932,464	343,047,577	315,531,593
End of year	$ (13,556,201)	$ 350,620,536	$ 337,064,335	$ 343,047,577

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

Woods Hole Oceanographic Institution
Statements of Cash Flows
Years Ended December 31, 2018
(With Summarized Financial Information for the Year Ended December 31, 2017)

	2018	2017
Cash flows from operating activities		
Total change in net assets	$ (5,983,242)	$ 27,515,984
Adjustments to reconcile total change in net assets to net cash used in operating activities		
Depreciation	9,944,870	9,546,721
Amortization	(256,226)	-
Change in split interest agreements	169,027	(126,820)
Allowance for uncollectible pledges	12,000	(14,963)
Discount on pledges	(55,207)	(64,649)
Net realized and unrealized loss (gain) on investments	3,049,802	(41,648,830)
Loss on refinance of Series 2008 Bonds	782,436	-
Gain on sale of investment	(1,300,000)	-
Unrealized gain on interest swap	(1,401,445)	(804,378)
Pension related changes other than net periodic pension costs	(23,646,479)	7,331,410
Contributions to be used for long-term investment	(2,617,952)	(2,387,981)
Receipt of contributed securities	-	(289,270)
Liquidation of contributed securities	-	289,270
(Increase) decrease in assets		
Restricted cash	(12,275,900)	1,172,246
Reimbursable costs and fees		
Billed	4,809,808	3,871,598
Unbilled	2,638,463	(828,616)
Other receivables	(1,355,856)	568,579
Pledges receivable	4,325,219	(3,193,230)
Inventory	(1,129,671)	(230,121)
Deferred charges and prepaid expenses	(552,163)	(647,074)
Other assets	277,469	(819,432)
Remainder trusts	95,873	(122,577)
Supplemental retirement	-	10,918,509
Deferred fixed rate variance	3,377,628	(2,004,689)
Increase (decrease) in liabilities		
Accrued pension and postretirement liability	4,960,146	(7,740,665)
Accounts payable and other liabilities	(1,180,333)	6,815,990
Accrued payroll and related liabilities	812,510	546,483
Deferred revenue and refundable advances	4,846,949	233,424
Accrued supplemental retirement benefits	-	(10,918,459)
Deferred financing costs	(644,296)	10,530
Net cash used in operating activities	(12,296,570)	(3,021,010)
Cash flows from investing activities		
Capital expenditures		
Additions to property and equipment	(13,057,355)	(10,936,207)
Bond Proceeds		
Transfer bond proceeds to trustee	(35,000,000)	-
Proceeds used for PP&E, net	592,299	-
Endowment and other		
Purchase of investments	(2,917,417)	(11,280,763)
Sale of investments	22,997,814	29,649,952
Receivable for investments sold	(215,303)	(224,244)
Purchase of investments designated for retiree and active medical plans	(3,349,759)	(5,551,747)
Proceeds from the sale of investments designated for retiree and active medical plans	4,267,601	6,536,193
Net cash provided by investing activities	(26,682,120)	8,193,184
Cash flows from financing activities		
Proceeds from issuance of new debt	86,306,214	-
Repayments under debt agreement	(51,315,730)	(1,828,929)
Borrowing under line of credit	18,000,000	18,000,000
Repayments under line of credit	(22,000,000)	(20,000,000)
Contributions to be used for long-term investment	2,617,952	2,387,981
Net cash used in financing activities	33,608,436	(1,440,948)
Net (decrease) increase in cash and cash equivalents	(5,370,254)	3,731,226
Cash and cash equivalents		
Beginning of year	12,094,856	8,363,630
End of year	$ 6,724,602	$ 12,094,856
Supplemental disclosures		
Cash paid for interest	$ 4,549,338	$ 4,087,857
Noncash activity		
Construction in process additions remaining in accounts payable	494,714	708,240
Contributed securities	-	289,270

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

1. Background

Woods Hole Oceanographic Institution (the "Institution") is a private, independent not-for-profit research and educational institution located in Woods Hole, Massachusetts. Founded in 1930, the Institution is dedicated to advancing knowledge of the ocean and its interaction with the Earth system through a sustained commitment to excellence in science, engineering, and education and to the application of this knowledge to problems facing society.

The Institution is a qualified tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code as it is organized and operated for education and scientific purposes.

2. Summary of Significant Accounting Policies

Basis of Presentation
The accompanying financial statements have been prepared on the accrual basis and in accordance with accounting principles generally accepted in the United States of America.

The financial statements include certain prior-year summarized comparative information in total but not by net asset class. Such information does not include sufficient detail to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the Institution's audited financial statements for the year ended December 31, 2017, from which the summarized information was derived.

Net assets, revenues, and realized and unrealized gains and losses are classified based on the existence or absence of donor-imposed restrictions and legal restrictions imposed under Massachusetts State law. Accordingly, net assets and changes therein are classified as follows:

Net Assets With Donor Restrictions
Donor-imposed restricted net assets are subject to donor-imposed stipulations that they be maintained by the Institution in perpetuity, or may or will be met by actions of the Institution and/or the passage of time. Generally the donors of donor-restricted endowment funds permit the Institution to use all or part of the income earned and capital appreciation, if any, on related investments for general or specific purposes. Assets in an endowment fund are donor restricted assets until the Institution appropriates and spends such sums in accordance with the terms of the underlying endowment funds and in accordance with Massachusetts law, at which time they will be released to revenues without donor restrictions.

Net Assets Without Donor Restrictions
Net assets without donor restrictions are not subject to donor-imposed stipulations. Revenues are reported as increases in net assets without donor restrictions unless use of the related assets is limited by donor-imposed restrictions with the exception of certain investment expenses which are required to be netted against investment return. Expenses are reported as decreases in net assets without donor restrictions. Gains and losses on investments and other assets or liabilities are reported as increases or decreases in net assets without donor restrictions unless their use is restricted by explicit donor stipulations or law. Expirations of net assets with donor restrictions, that is, the donor-imposed stipulated purpose has been accomplished and/or the stipulated time period has elapsed, are reported as releases between the applicable classes of net assets. Amounts received for sponsored research are reflected in sponsored research revenue and released to operations when spent for the appropriate purpose, or as deferred revenue if expenditures have yet to be incurred.

Contributions
Contributions, including promises to give, are recognized as revenues in the period received. Contributions subject to donor-imposed stipulations that are met in the same reporting period are reported as support without donor restrictions. Promises to give that are scheduled to be received after the balance sheet date or are subject to donor-imposed stipulations are shown as increases in net assets with donor restrictions and are released to net assets without donor restrictions when the purpose or restriction is met. Promises to give, subject to donor-imposed stipulations that the corpus be maintained perpetuity, are recognized as increases in net assets with donor restrictions. Conditional promises to give are not recognized until they become, that is, when the conditions on which they depend are substantially met. Contributions other than cash are generally recorded at market value on the date of the gift (or an estimate of fair value); although certain noncash gifts, for which a readily determinable market value cannot be established, are recorded at a nominal value until such time as the value becomes known. Contributed securities are sold immediately upon receipt. Contributions to be received after one year are discounted at the appropriate rate commensurate with risk. Amortization of such discount is recorded as additional contribution revenue in accordance with restrictions imposed by the donor on the original contribution, as applicable. Amounts receivable for contributions are reflected net of an applicable reserve for collectability.

The Institution reports contributions in the form of land, buildings, or equipment as operating support without donor restrictions at fair market value when received.

Dividends, interest and net gains on investments of endowment and similar funds are reported as follows:

- As increases in net assets with donor restrictions if the terms of the gift require that they be added to the principal of a donor restricted endowment fund;

- As increases in net assets with donor restrictions if the terms of the gift or relevant state law impose restrictions on the current use of the income or net realized and unrealized gains until they are appropriated for expenditure and/or the purpose restrictions are met; and

- As increases in net assets without donor restrictions in all other cases.

Operations
The statement of activities reports the Institution’s operating and nonoperating activities. Operating revenues and expenses consist of those activities attributable to the Institution’s current annual research or educational programs, all gifts received, charter income, and a component of endowment income appropriated for operations (Note 3). Endowment investment income, gains and losses, from endowment funds without donor restrictions, over the amount appropriated under the Institution’s spending plan are reported as nonoperating revenue (expense) as investment return (less than) in excess of amounts designated for sponsored research, education and current operations.

Nonoperating revenues (expenses) also include the change in value of split interest agreements, realized/unrealized gains (losses) gains on interest rate swaps, and the net periodic pension income (cost) on the noncontributory defined benefit pension plan that is not reimbursed through negotiated fixed rate agreements with the federal government. Additionally, nonoperating activities include redesignation of donor gifts, depreciation on certain government-funded facilities and pension related changes other than net periodic pension costs.

As a result of an amendment to the postretirement health plan, in 2012 and forward, the Institution recognized the return on investments designated for retiree and active medical plan expenses, and actual active and retiree medical expenses as nonoperating activities when these expenses are funded by withdrawals from the postretirement plan (Note 10).

Cash and Cash Equivalents

Cash and cash equivalents consist of cash, money market accounts, certificates of deposit and overnight repurchase agreements with initial maturities of three months or less when purchased which are stated at cost, which approximates market value.

The Institution invests its cash and cash equivalents in money market funds at a financial institution which fully insures the balances held.

Included in restricted cash at December 31, 2018 and 2017 is $23,697,725 and $11,424,675, respectively, representing advances received from the United States Navy, other U.S. Government and state agencies as well as contributions from donors who have restricted money for specific research initiatives. Also included in restricted cash at December 31, 2018 and 2017 is $3,029,094 and $2,015,965 respectively of Board designated cash. Interest earned on unspent funds from federal agencies is remitted to the federal government.

Also included in restricted cash at December 31, 2018 and 2017 is $262,243 and $259,393, respectively, representing cash restricted by the Massachusetts Radiation Control Program and Department of Environmental Protection. Interest earned on unspent funds is reinvested within the restricted cash account.

Investments

Investment securities are carried at market value and determined as follows: securities traded on a national securities exchange are valued at the last reported sales price on the last business day of the year; securities traded in the over-the-counter market and listed securities for which no sales prices were reported on that day are valued at closing bid prices. The value of publicly traded securities or mutual funds are based upon quoted market prices and net asset values. Other investments, such as private equity funds, venture capital funds and hedge funds for which no such quotations or valuations are readily available, are carried at fair value as estimated by management using values provided by external investment managers. The Institution reviews and evaluates the valuations provided by investment managers and believes that these valuations are a reasonable estimate of fair value as of December 31, 2018 and 2017 but are subject to uncertainty and, therefore, may differ from the value that would have been used had a ready market for the investments existed and such differences could be material.

Purchases and sales of investment securities are recorded on a trade date basis. Realized gains and losses are computed on a specific identification method. Investment income, net of investment expenses, is distributed on the unit method.

The Institution makes investments in funds that make direct investments in public securities, over the counter securities, and other securities which may or may not have readily available market prices. The Institution follows authoritative guidance under generally accepted accounting principles for estimating the fair value of investments in those funds that have calculated net asset value per share in accordance with the specialized accounting guidance for investment companies. Accordingly, the Institution uses the net asset value, (NAV) without further adjustment as a practical expedient to determine the fair value of these funds which (a) do not have a readily determinable fair value and (b) either have the attributes of an investment company or prepare their financial statements consistent with the measurement principles of an investment company. These values are reviewed and approved by the Institution.

Investment Income Unitization

The Institution's investments are pooled in an endowment (Fund) fund and the investments and allocation of income are tracked on a unitized basis. The Institution distributes to operations for each individual fund an amount of investment income earned by each of the fund's proportionate share of investments based on a total return policy.

The Board of Trustees has appropriated all of the income and a specified percentage of the net appreciation (depreciation) to operations as prudent considering the Institution's long- and short-term needs, present and anticipated financial requirements, expected total return on its investments, price level trends, and general economic conditions. Under the Institution's current endowment spending policy, which is within the guidelines specified under state law, the Institution's annual operating budget should not exceed 5.0% of the Fund's (pooled investments) trailing 36 month rolling average market value. This amounted to $20,136,000 and $19,912,000 for the years ended December 31, 2018 and 2017, respectively, and is classified in operating revenues (research, education, and operations). The Institution is subject to the State Prudent Management of Institutional Funds Act (SPMIFA) and, thus, classifies amounts in its donor-restricted endowment funds as net assets with donor restrictions because those net assets are time restricted until the Board of Trustees appropriates such amounts for expenditure. Most of those net assets also are subject to purpose restrictions that must be met before reclassifying those net assets to net assets without donor restrictions. The Board of Trustees has interpreted SPMIFA as not requiring the maintenance of purchasing power of the original gift amount contributed to an endowment fund, unless a donor stipulates the contrary. As a result of this interpretation, when reviewing its donor-restricted endowment funds, The Institution considers a fund to be underwater if the fair value of the fund is less than the sum of (a) the original value of initial and subsequent gift amounts donated to the fund and (b) any accumulations to the fund that are required to be maintained in perpetuity in accordance with the direction of the applicable donor gift instrument. The Institution has interpreted SPMIFA to permit spending from underwater funds in accordance with the prudent measures required under the law. There were no underwater endowment funds at December 31, 2018 or 2017.

Deposits With Trustees for Construction

Deposits with trustees for construction consist principally of investments in United States Government obligations and have been deposited with trustees under certain loan agreements. These amounts are restricted for use on approved construction projects and facility improvements set forth under the Series 2018 Bond issue, (see Note 8). At December 31, 2018, $34,407,701 was available for these purposes. No amounts were outstanding at December 31, 2017.

Other Assets

Other assets consist primarily of investments held by various split-interest agreements and donated property.

Inventories
Inventories are stated at the lower of cost or net realizable value. Cost is determined using the first-in, first-out method. Included in inventories are costs associated with the construction of engineered equipment under contracts totaling $1,491,685 and $0 for the years ended December 31, 2018 and 2017 respectively.

Contracts and Grants
Revenue earned on grants for research is recognized as related costs are incurred. Revenue on contracts is recognized as value is transferred to customers, which is comparable to when related costs are incurred for research and research and development contracts. For engineered equipment contracts, revenue is recognized at a point in time when the equipment is delivered.

The Institution received 88% and 85% of its sponsored research revenues from government agencies including 35% and 33% of its operating revenues directly from the National Science Foundation and 11% and 14% from the United States Navy in fiscal years 2018 and 2017, respectively. Although applications for research funding to federal agencies historically have been funded, authorizations are subject to annual Congressional appropriations and payment.

Joint Program Revenue
The Institution operates a joint graduate program in Oceanography with another institution under a memorandum of agreement. Tuition is charged to students per semester at agreed upon rates.

Charter Income
Revenues earned from vessel charters are based upon negotiated day rates with customers or a fixed day rate that approximates fair value for certain parties to the lease.

Other Income
Included in other income is membership, royalty and other ancillary income. The Institution received insurance proceeds totaling $3,899,980 from the loss of a submersible vessel in 2017. The revenue recognized was $0 and $3,419,001 for the years ended December 31, 2018 and 2017 respectively.

Deferred Financing Costs
Costs incurred in connection with the placement of the MassDevelopment, Revenue Bonds, Woods Hole Oceanographic Institution Issue, Series 2018, have been deferred and are being amortized over the term of the obligation on a straight line basis, which approximates the effective interest method. The unamortized portion of the deferred financing costs are included in the offset to long-term debt on the statement of financial position.

Interest Rate Swap
The Institution entered into an interest rate swap agreement on the MassDevelopment, Variable Rate Revenue Bonds, Woods Hole Oceanographic Institution Issue Series A Bonds in order to convert a portion of the variable rate debt to fixed rate, thereby economically hedging against changes in the cash flow requirements of the Institution’s variable rate debt obligations. The Series A bonds were retired on January 2, 2009.

Net payments or receipts (difference between variable and fixed rate) under the swap agreement along with the change in fair value of the swap are recorded in nonoperating activities as net realized/unrealized gains (losses) gains on interest swap. The swap is carried at fair value and included in accounts payable and other liabilities in the statement of financial position.

Property, Plant and Equipment
Property, plant and equipment are stated at cost. Depreciation is provided on a straight-line basis at annual rates of 12 to 39 years on buildings and improvements, 10 to 15 years on vessels and dock facilities and 5 to 10 years on laboratory and other equipment. Depreciation expense on property, plant, and equipment purchased by the Institution in the amounts of $9,874,994 and $9,434,812 in 2018 and 2017, respectively, has been charged to operating activities. Depreciation on certain government-funded facilities (the Laboratory for Marine Science and the dock facility) amounting to $69,876 and $111,909 in 2018 and 2017 has been charged to nonoperating expenses as these assets were gifted by the Government.

Expenses
Expenses are recognized when incurred and charged to the functions to which they are directly related. Sponsored research includes general research, marine operations research and services and ship and submersible operation and usage. Academic programs costs are associated primarily with the Joint program. Unsponsored research includes internally funded research activities of the Institution. Other institutional activities includes, development, communications, marine operations support and other unsponsored activities.

Included in other institution activities are fund raising expenses totaling $3,112,695 and $3,235,913 for the years ended December 31, 2018 and 2017. Fund raising expenses totaled approximately 20% and 16% of revenue from contributions for the years ending December 31, 2018 and 2017 respectively. The calculation includes costs associated with the Institution's Development Office, (including direct support activities) and the Contributions and gifts total presented on the Statement of Activities (excluding Contributions in kind).

Use of Estimates
The preparation of the financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the period. Actual results could differ from those estimates.

New Accounting Pronouncements
In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers which outlines a single comprehensive revenue model for entities to use in accounting for revenue arising from contracts with customers. The guidance supersedes most current revenue recognition guidance, including industry-specific guidance, and ensures that entities appropriately reflect the consideration to which they expect to be entitled in exchange for goods and services, by allocating transaction price to identified performance obligations, and recognizing that revenue as performance obligations are satisfied. The Institution adopted ASC 606 as of January 1, 2018 using the modified retrospective transition method - i.e., by recognizing the cumulative effect of initially applying ASC 606 as an adjustment to the opening balance of net assets at January 1, 2018. The Institution elected to apply the standard only to contracts that are not completed as of that date therefore, the comparative information has not been adjusted and continues to be reported under the prior guidance of ASC 605. This guidance did not have a significant impact on the Institution's financial statements and related disclosures.

In March 2016, the FASB issued ASU 2016-06 Derivatives and Hedging (Topic 815), Contingent Put and Call Options in Debt Instruments. The amendments in this Update clarify the requirements for assessing whether contingent call (put) options that can accelerate the payment of principal on debt instruments are clearly and closely related to their debt hosts. ASU 2016-06 is effective for the Institution's year ending December 31, 2018. There were no changes to net assets or changes in net assets as a result of this adoption.

In August 2016, the FASB issued ASU 2016-14, Not-for-Profit Entities (Topic 958), Presentation of Financial Statements of Not-for-Profit Entities. This update is the result of the FASB's efforts in the first of two phases of its project. The project is designed to improve the current net asset classification requirements and the information presented in the financial statements and notes of not-for-profit entities. The main provisions of this Update require a not-for-profit entity to present on the face of the statements two classes of net assets; report investment return net of external and direct internal investment expenses, and enhanced liquidity and expense disclosures. The Institution has adopted this pronouncement effective for the Institution's year ending December 31, 2018.

In August 2016, the FASB issued ASU 2016-15, Statements of Cash Flows (Topic 230), Classification of Certain Cash Receipts and Cash Payments. The amendments in this update decrease diversity in practice in how certain cash receipts and payments as presented and classified in the statements of cash flow. ASU 2016-15 is effective for the Institution's year ending December 31, 2019. The Institution is currently assessing the impact of this pronouncement.

In November 2016, the FASB issued ASU 2016-18 Statement of Cash Flows (Topic 815), Restricted Cash. The amendments in this Update clarify the classification and presentation of changes of restricted cash in the statement of cash flows. ASU 2016-18 is effective for the Institution's year ending December 31, 2019. The Institution is currently assessing the impact of this pronouncement.

In March 2017, the FASB issued ASU 2017-07 Compensation-Retirements Benefits (Topic) 715), Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Cost. The amendments in this update improve the presentation of net periodic pension costs and net periodic postretirement benefit costs. ASU 2017-07 is effective for the Institution's year ending December 31, 2019. The Institution is currently assessing the impact of this pronouncement.

In June 2018, the FASB issued ASU 2018-08 Clarifying the Scope and Accounting Guidance for Contributions Received and Contributions Made (Topic 958). The FASB issued this update to clarify and improve the scope and accounting guidance for contributions received and made. The amendments of this update should assist entities in (1) evaluating whether transactions should be accounted for as contributions (nonreciprocal transactions) within the scope of Topic 958, Not-for-Profit Entities, or as exchange transactions subject to other guidance and (2) determining whether a contribution is conditional. ASU 2018-08 is effective for the Institution's year ending December 31, 2019. The Institution has concluded there is a material impact from this pronouncement on the Institution's financial statements upon modified prospective adoption as of January 1, 2019.

In February of 2016, the FASB issued ASU 2016-02 Leases (Topic 842). The amendments in this update increase comparability and transparency among organizations by recognizing most lease assets and liabilities on the balance sheet and disclosing key information about leasing arrangements. The amendments in this Update for the Institution are effective for the year ended December 31, 2019. The Institution has concluded the impact of this ASU to not be material.

3. Investments

The Institution has retained and outsourced services for manager selection, risk management and asset allocation of endowment assets to a third party. The assets transferred for investment under this arrangement, titled "Multistrategy Investment Fund", represent holdings in the following classifications; Equity, Long/Short Equity, Real Assets, Commodities/Resources Credit/Special Situations, Absolute return, Fixed Income and Hedges/Opportunistic. These assets represent a concentrated investment in one investment manager. A consequence of this concentration is that the performance may be more favorably or unfavorably affected by the performance of the individual manager. The Institution invests in two separate sub-funds within the Multi-strategy Investment Fund. One sub-fund allows for annual withdrawals while the other allows for daily withdrawals with a notice of ten business days.

The Institution's endowment investment services provider has established a single investor fund, (with the Institution as the sole investor) WHOI Investment Holdings, LP, comprised of the currently managed Multi-strategy funds and the transfer of remaining legacy endowment private investments which had been managed separately. The transfers of the Institution's investments into the sole investor fund was completed during 2015. Capital calls, distributions and reporting related to the previously separately managed legacy portfolio will be managed by the Institution's investment service provider. WHOI Investment Holdings, LP continues to hold the same two separate sub-funds within the Multi-strategy Investment Fund, as described above, which now also include the transferred legacy private investments.

The following table presents the classification and carrying value of investments at December 31:

	2018		2017	
	Cost	**Market**	**Cost**	**Market**
Assets				
Cash and cash equivalents	$ 2,373,346	$ 2,373,346	$ 1,054,186	$ 1,054,186
Multi-strategy Investment Funds -Short-term Liquidity Funds	29,549,000	30,464,003	29,629,000	30,076,039
Multi-strategy Investment Funds - WHOI Investment Holdings, LP	205,070,255	364,346,153	224,589,810	386,441,620
Total investments pooled	236,992,601	397,183,502	255,272,996	417,571,845
Investments designated for retiree and active medical plans				
Commingled funds	9,115,984	10,037,698	9,661,621	11,897,396
Total investments designated for retiree and active medical plans	9,115,984	10,037,698	9,661,621	11,897,396
Total assets at fair value	$ 246,108,585	$ 407,221,200	$ 264,934,617	$ 429,469,241

The following schedule summarizes the investment return and its classification in the statement of activities:

	Without Donor Restrictions	With Donor Restrictions	Total 2018	Total 2017
Dividend interest and other income	$ 3,805	$ 13,600	$ 17,405	$ 38,850
Change in unrealized appreciation	(550,602)	(1,967,881)	(2,518,483)	39,567,607
Total return on investments	(546,797)	(1,954,281)	(2,501,078)	39,606,457
Investment return designated for				
Sponsored research	-	(7,836,928)	(7,836,928)	(7,801,136)
Education	-	(8,849,705)	(8,849,705)	(8,626,732)
Current operations	(3,449,367)	-	(3,449,367)	(3,484,132)
Total distributed to operations	(3,449,367)	(16,686,633)	(20,136,000)	(19,912,000)
Investment return in excess of amounts designated for sponsored research, education and current operations	$ (3,996,164)	$ (18,640,914)	$ (22,637,078)	$ 19,694,457

Realized and unrealized gains/(loss) attributable to investments designated for retiree and active medical plans were $941,856 and $1,680,496 for the years ended December 31, 2018 and 2017, respectively.

Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investments, it is at least reasonably possible that changes in the value of investment securities will occur in the near term and that such changes could materially affect the market values and the amounts reported in the statement of financial position.

4. Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (also referred to as "exit price"). Therefore, a fair value measurement should be determined based on the assumptions that market participants would use in pricing the asset or liability. In determining fair value, the use of various valuation approaches, including market, income and cost approaches, is permitted.

Fair Value Hierarchy

A fair value hierarchy has been established based on whether the inputs to valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the reporting entity's assumptions about the inputs market participants would use. The fair value hierarchy requires the reporting entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

The hierarchy is described below:

Level 1 Valuations using quoted prices in active markets for identical assets or liabilities. Valuations of these products do not require a significant degree of judgment. Level 1 assets and liabilities primarily include debt and equity securities that are traded in an active exchange market.

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

Level 3 Valuations using unobservable inputs that are supported by little or no market activity and are significant to the fair value of the assets or liabilities. Level 3 includes assets and liabilities whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques.

Inputs broadly refer to the assumptions that market participants use to make valuation decisions, including assumptions about risk. As described in Note 2, the Institution generally uses the net asset value per share of the investment (or its equivalent) reported by the investee fund manager as the primary input to its valuation; however adjustments to the reported amount may be made based on various factors.

Investments that are valued using the “practical expedient” or net asset value per share (“NAV”) are excluded from the fair value leveling hierarchy. Investments include private equity, venture capital, other limited partnerships and multi strategy funds.

The following tables summarize fair value measurements at December 31, 2018 and 2017 for financial assets measured at fair value:

	2018				
	Quoted Prices in Active Markets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	NAV as Practical Expedient (NAV)	Total Fair Value
Assets					
Cash and cash equivalents	$ 2,373,346	$ -	$ -	$ -	$ 2,373,346
Multi-strategy Investment Funds - Short-term Liquidity Funds	-	-	-	30,464,003	30,464,003
Multi-strategy Investment Funds - WHOI Investment Holdings, LP	-	-	-	364,346,153	364,346,153
Total pooled	2,373,346	-	-	394,810,156	397,183,502
Contributions receivable from remainder trust	-	-	834,582	-	834,582
Other assets	-	-	822,533	-	822,533
Investments designated for retiree and active medical plans - commingled funds	-	-	-	10,037,698	10,037,698
Total assets at fair value	$ 2,373,346	$ -	$ 1,657,115	$ 404,847,854	$ 408,878,315
Interest rate swap	$ -	$ 6,043,166	$ -	$ -	$ 6,043,166
Total liabilities at fair value	$ -	$ 6,043,166	$ -	$ -	$ 6,043,166

	2017				
	Quoted Prices in Active Markets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	NAV as Practical Expedient (NAV)	Total Fair Value
Assets					
Cash and cash equivalents	$ 1,054,186	$ -	$ -	$ -	$ 1,054,186
Multi-strategy Investment Funds - Short-term Liquidity Funds	-	-	-	30,076,039	30,076,039
Multi-strategy Investment Funds - WHOI Investment Holdings, LP	-	-	-	386,441,620	386,441,620
Total pooled	1,054,186	-	-	416,517,659	417,571,845
Contributions receivable from remainder trust	-	-	930,455	-	930,455
Other assets	-	810,000	289,952	-	1,099,952
Investments designated for retiree and active medical plans - commingled funds	-	-	-	11,897,396	11,897,396
Total assets at fair value	$ 1,054,186	$ 810,000	$ 1,220,407	$ 428,415,055	$ 431,499,648
Interest rate swap	$ -	$ 7,444,611	$ -	$ -	$ 7,444,611
Total liabilities at fair value	$ -	$ 7,444,611	$ -	$ -	$ 7,444,611

The Institution has adopted a policy that defines near-term liquidity as those investments allowing liquidity within 90 days of the reporting period.

The following table presents the assets and liability carried at fair value as of December 31, 2018 and 2017 that are classified within Level 3 of the fair value hierarchy defined above:

	2018	
	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)	
	Contributions Receivable From Remainder Trust	Other Assets
Balance January 1, 2018	$ 930,455	$ 289,952
Unrealized losses	(95,873)	(88,923)
Transfers	-	621,504
Balance December 31, 2018	$ 834,582	$ 822,533

	2017	
	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)	
	Contributions Receivable From Remainder Trust	Other Assets
Balance January 1, 2017	$ 807,878	$ 280,570
Unrealized gains	122,577	9,382
Balance December 31, 2017	$ 930,455	$ 289,952

Transfers in and out of Level 3 are driven by events and circumstances affecting terms, conditions, restrictions, and redemption policies of the underlying investments. In 2018, $621,504 was transferred out of Level 2 and into Level 3.

The fair market value of the investments described in the table below are based on net asset value per share of the investments as of December 31, 2018.

Assets	Fair Value	Redemption Terms	Redemption Restrictions
Multi-strategy Investment Funds Short-term liquidity funds	$ 30,464,003	Monthly redemption terms	
Multi-strategy Investment Funds WHOI Investment Holdings, LP	364,346,153	Annual (year end), redemption terms	$17,313,467 designated as illiquid remaining lives up to 6 years
Investments designated for retiree and active medical plans - commingled funds	10,037,698	Daily redemption terms	
Total investments	$ 404,847,854		

The fair market value of the investments described in the table below are based on net asset value per share of the investments as of December 31, 2017.

Assets	Fair Value	Redemption Terms	Redemption Restrictions
Multi-strategy Investment Funds Short-term liquidity funds	$ 30,076,039	Monthly redemption terms	
Multi-strategy Investment Funds WHOI Investment Holdings, LP	386,441,620	Annual (year end), redemption terms	$22,770,026 designated as illiquid remaining lives up to 7 years
Investments designated for retiree and active medical plans - commingled funds	11,897,396	Daily redemption terms	
Total investments	$ 428,415,055		

The Institution had unfunded commitments relating to endowment assets of $3,257,874 and $3,959,579 relating to private equity, venture capital and other limited partnerships as of December 31, 2018 and 2017, respectively.

5. Pledges Receivable, Net

Pledges that are expected to be collected within one year are recorded at their net realizable value. Pledges that are expected to be collected in future years are recorded at the present value of estimated future cash flows. Discount rates used to calculate the present value of pledges receivable ranged from 2.76% to 3.51% at December 31, 2018 and were 2.78% to 3.21% at December 31, 2017.

Pledges receivable consist of the following at December 31:

	2018	2017
Unconditional promises expected to be collected in		
Less than one year	$ 1,038,324	$ 5,507,794
One year to five years	1,202,251	1,058,000
Reserve for uncollectible pledges receivable	(157,000)	(145,000)
Unamortized discount	(47,923)	(103,130)
	$ 2,035,652	$ 6,317,664

6. Contribution Receivable From Remainder Trusts, Net and Other Split Interest Agreements

Contributions receivable from remainder trusts at December 31, 2018 and 2017 were $834,582 and $930,455, respectively. In addition the Institution is the beneficiary for split interest agreements held in gift annuity and pooled income funds totaling $822,533 and $1,099,952 for the years ended December 31, 2018 and 2017 respectively. These amounts are presented in other assets. Included in accounts payable and other liabilities are net expected payouts of $525,200 and $729,465 for the years ended December 31, 2018 and 2017 respectively. Contribution revenue for split interest agreements totaled $0 and $492,655 for the years ended December 31, 2018 and 2017 respectively.

The receivable and other split interest agreements and related revenues are measured at the present value of estimated future cash flows to be received, net of expected payouts, and recorded in the appropriate net asset category based on donor stipulation. During the term of these agreements, changes in the value are recognized based on amortization of discounts and changes in actuarial assumptions. For the years ended December 31, 2018 and 2017, discount rates ranging from 4.72% to 6.0% were used in these calculations.

7. Deferred Fixed Rate Variance

The Institution receives funding or reimbursement from federal government agencies for sponsored research under government grants and contracts. Revenue is recognized as related costs are incurred. The Institution has negotiated fixed rates with the federal government for the recovery of certain fringe benefits and indirect costs on these grants and contracts. Such recoveries are subject to carryforward provisions that provide for adjustments to be included in the negotiation of future fixed rates. The deferred fixed rate variance accounts represent the cumulative amount owed to or due from the federal government. The Institution's rates are negotiated with the Office of Naval Research (ONR), the Institution's cognizant agency.

The composition of the deferred fixed rate variance is as follows:

Deferred fixed rate variance asset at December 31, 2016	$ 2,893,538
2017 indirect costs	89,448,948
Amounts recovered	(87,444,259)
2017 change	2,004,689
Deferred fixed rate variance asset at December 31, 2017	4,898,227
2018 indirect costs	93,792,092
Amounts recovered	(97,169,720)
2018 change	(3,377,628)
Deferred fixed rate variance asset at December 31, 2018	$ 1,520,599

As of December 31, 2018, the Institution has expended a cumulative amount more than recovered amounts of $1,520,599 which will be reflected as an addition to future year recoveries. This amount has been reported as an asset of the Institution. Included in the Institution's rate agreements with their cognizant agency is a provision requiring full liquidation of any deferred rate variance generated in a specific year two years into the future as part of that year's rate calculation.

8. Line of Credit, Bonds Payable and Interest Rate Swap

Indebtedness at December 31, 2018 and 2017 includes bonds issued through MassDevelopment. Balances of outstanding bonds payable at December 31 consist of the following:

	2018	2017
MassDevelopment, Series B, (2008) Fixed Rate Revenue Bonds	$ -	$ 51,265,000
MassDevelopment, Series 2018, Fixed Rate Revenue Bonds	75,510,000	-
Add: Series 2018 unamortized bond premium	10,510,137	-
Less: Series 2018 and Series B (2008) unamortized bond discounts	(238,169)	(595,173)
Deferred financing costs	(391,809)	(152,066)
Bonds payable	$ 85,390,159	$ 50,517,761

In fiscal 2004, proceeds were received from the offering of the $54,850,000 MassDevelopment, Variable Rate Revenue Bonds, Woods Hole Oceanographic Institution Issue, Series A (2004), (the "Series A Bonds"), which were used to repay the MassDevelopment B Pool loans and for campus construction completed in December 2007. The bonds contain certain restrictive covenants including limitations on obtaining additional debt, filings of annual financial statements and limitations on the creation of liens. In addition, the Institution agrees that, subject to any governmental restrictions, its fiduciary obligations and limitations imposed by law, it will maintain resources with and without donor restrictions at a market value equal to at least 75% of all outstanding indebtedness.

On December 1, 2008, the Institution issued $65,000,000 MassDevelopment, Fixed Rate Revenue Bonds, Woods Hole Oceanographic Institution Issue, Series B (2008), (the "Series B Bonds"). The proceeds were used for major maintenance and renovation projects throughout the Institution and were used to retire the Series A Bonds. The Series B Bonds mature in 2034 and bear fixed interest rates from 4.0% to 5.5% payable on June 1 and December 1 beginning in 2009. The Series B Bonds are collateralized by the Institution's revenues without donor restrictions. The Institution incurred costs of $268,500 associated with the issue which have been capitalized and are being amortized over the life of the bonds. Debt covenants are consistent with the requirements under the Series A bond agreement as long as the interest rate swap agreement is in effect.

On May 9, 2018 the Institution issued $75,510,000 MassDevelopment, Fixed Rate Revenue Bonds, Woods Hole Oceanographic Series 2018. The Institution received proceeds of $86,306,214 net of issuance costs of $644,296, which included underwriter's discount, legal, consulting and Issuer costs. Of this amount $50,660,224 was used to retire the Series B (2008) obligations of outstanding principal and interest with the remaining amount held by trustees that will be drawn down to fund future maintenance and renovation projects throughout the Institution along with the building of new facilities. The Bonds mature in 2048 and bear a fixed interest rates ranging from 4.0% to 5%. The Series 2018 Bonds contain no financial covenants. Interest expense on the Bonds totaled $2,315,050 and $2,760,844, net of amounts capitalized of $867,005 and $0 for the years ended December 31, 2018 and 2017 respectively.

The Institution maintains two uncollateralized lines of credit with two separate banks. The lines of credit in the aggregate allow for a maximum borrowing capacity of $45,000,000. One agreement, with a maximum capacity of $30,000,000, bears interest at 1% below the Wall Street Journal Prime Rate, contains no expiration date but is subject to annual reviews on or about September 30. The second line of credit, with a maximum capacity of $15,000,000, bears interest at the prevailing LIBOR rate plus .90% per annum and expires September 30, 2019. The agreement requires the loan to be repaid in full for a minimum of thirty consecutive days annually. The Institution had outstanding borrowing on lines of credit of $7,000,000 and $11,000,000 at December 31, 2018 and 2017, respectively.

The aggregate maturities due on the Series 2018 long-term debt at December 31, 2018 are as follows:

Fiscal Year	**Principal Amount**
2019	$ 1,120,000
2020	1,170,000
2021	1,230,000
2022	1,290,000
2023	1,360,000
Thereafter	69,340,000
	$ 75,510,000

In June 2004, the Institution entered into an interest rate swap agreement on the Series A Bonds (subsequently refinanced to Series B Bonds) in order to convert a portion of the variable rate debt to fixed rate, thereby economically hedging against changes in the cash flow requirements of the Institution's variable rate debt obligations. The term of the swap is through June 1, 2034 and effectively locked in a fixed rate of 3.79% per annum. The agreement has a notional amount of $45,725,000. Interest expense in association with the swap agreement totaled $984,543 and $1,278,716 which is reflected as part of the net realized/unrealized gains (losses) on interest rate swap at December 31, 2018 and 2017, respectively.

The fair value of the interest rate swap at December 31, 2018 and 2017 is as follows:

	Fair Value	
	2018	**2017**
Statement of financial position location		
Accounts payable and other liabilities	$ 6,043,166	$ 7,444,611

The effect of the interest rate swap on the statement of activities for 2018 and 2017 is as follows:

	Amount of Loss Recognized in Statement of Activities	
	2018	**2017**
Location of loss recognized in statement of activities		
Nonoperating income and expenses		
Net realized/unrealized gains (losses) on interest rate swap	$ 416,902	$ (474,338)

9. Retirement Plans

The Institution maintains a noncontributory defined benefit pension plan covering certain employees of the Institution (Qualified Plan), and a supplemental benefit plan for certain other employees. Pension benefits are earned based on years of service and compensation received. The Institution's policy is to fund at least the minimum required by the Employee Retirement Income Security Act of 1974.

The Institution sponsors a 403(b) Defined Contribution Plan (DC Plan). Contributions for the defined contribution plan totaled $8,219,480 and $7,928,991 for the years ended December 31, 2018 and 2017, respectively. Effective January 1, 2010, no new participants were allowed to enter the Qualified Plan but were eligible to participate in the DC Plan. The Qualified Plan was placed under a soft freeze for current participants with all future retirement benefits being earned through the new DC Plan and prior benefits adjusted for future salary increases.

	Qualified Plan Pension Benefits	
	2018	**2017**
Change in benefit obligation		
Benefit obligation at beginning of year	$ 309,322,429	$ 284,054,045
Interest cost	11,432,302	12,020,775
Actuarial (gain) loss	(26,772,903)	28,874,845
Benefits paid	(8,435,000)	(7,979,063)
Settlements	(13,408,692)	(7,870,861)
Transfers from other plans	-	222,688
Benefit obligation at end of year	272,138,136	309,322,429
Change in plan assets		
Fair value of plan assets at beginning of year	194,622,032	169,312,047
Employer contributions	8,500,000	18,320,629
Actual return on plan assets	(10,165,742)	22,616,592
Benefits paid	(8,435,000)	(7,979,063)
Settlements	(13,408,692)	(7,870,861)
Transfers from other plans	-	222,688
Fair value of plan assets at end of year	171,112,598	194,622,032
Funded status	$ (101,025,538)	$ (114,700,397)
Amounts recognized in the statement of financial position consist of		
Accrued benefit liability	$ 101,025,538	$ 114,700,397
Net amount recognized	$ 101,025,538	$ 114,700,397
Amounts recognized in net assets without donor restrictions		
Net actuarial loss	$ 62,684,921	$ 82,498,624
Information for pension plans with accumulated benefit obligations in excess of plan assets		
Projected benefit obligation	$ 272,138,136	$ 309,322,429
Accumulated benefit obligation	262,643,370	298,099,467
Components of net periodic benefit cost		
Service cost	$ -	$ -
Interest cost	11,432,302	12,020,775
Expected return on plan assets	(10,603,334)	(9,075,046)
Amortization of net actuarial loss	9,391,993	6,991,414
Settlements	2,679,701	-
Net periodic benefit cost	$ 12,900,662	$ 9,937,143
Other changes in plan assets and benefit obligations recognized in unrestricted net assets		
Amortization of net actuarial loss	$ (9,391,993)	$ (6,991,414)
Net actuarial gain	(7,742,009)	15,333,299
Immediate recognition of loss due to settlements	(2,679,701)	
Total recognized in nonoperating revenues and expenses	$ (19,813,703)	$ 8,341,885

The Institution has reflected $8,500,000 and $6,900,000 for the years ended December 31, 2018 and 2017, respectively, in the operating section of the statement of activities which represents employer contributions reimbursed through the employee benefit fixed rate as negotiated with the United States Government. Any difference between the employer contributions and the net periodic benefit cost is recorded in the nonoperating section of the statement of activities. This difference amounted to $4,400,662 and $3,037,143 for the years ended December 31, 2018 and 2017, respectively.

	Qualified Plan Pension Benefits	
	2018	**2017**
Weighted-average assumptions used to determine benefit obligations at December 31		
Discount rate	4.4 %	3.8 %
Rate of compensation increase	3.5 %	3.5 %
Weighted-average assumptions used to determine net periodic benefit cost for years ended December 31		
Discount rate	3.8%	4.4 %
Expected long-term rate of return on plan assets	6.5 %	6.0 %
Rate of compensation increase	3.5 %	3.5 %

To develop the expected long-term rate of return on assets assumption, the Institution considered the current level of expected returns on risk-free investments (primarily government bonds), the historical level of the risk premium associated with the other asset classes in which the portfolio is invested and the expectations for future returns of each asset class. The expected return for each asset class was then weighted based on the target asset allocation to develop the expected long-term rate of return on assets assumption for the portfolio, net of expenses expected to be paid. This resulted in a 6.5% and 6.0% assumption as of December 31, 2018 and 2017 respectively.

Plan Assets

The long-term investment objectives of the Plan are to (1) achieve an average real total return assessed over rolling five year periods, that is consistent with the Plan's actuarial assumptions; (2) generate acceptable long-term returns, as determined by measurement against the Fund's benchmarks and (3) generate acceptable long-term returns without compromising the liquidity and stability required to support the Plan's annual payments to the Plan's beneficiaries.

The Institution has retained and outsourced services for manager selection, risk management and asset allocation of the Plan's assets to a third party to assist with implementing the Plan's investment policy. In addition, Target Allocations for asset classes have been revised to include two broad categories; (1) Growth and Excess Return Portfolio, (2) Fixed Income/Liability Hedging Portfolio. These categories have been assigned a 60% and 40% Target Allocation, respectively.

Expected amounts amortized from net assets without donor restrictions into net periodic pension cost for the next fiscal year	
Amortization of net loss	$ 6,429,953

Fair Value Disclosures

The following fair value hierarchy table's present information about the Qualified Plan's financial assets measured at fair value on a recurring basis:

	2018				
	Level 1	Level 2	Level 3	NAV as Practical Expedient	Total
Assets					
Cash and cash equivalents	$ 5,991,970	$ -	$ -	$ -	$ 5,991,970
Private equity, venture capital and other limited partnerships	-	-	-	24,444,901	24,444,901
Commingled funds	-	-	-	45,627,573	45,627,573
Hedge funds	-	-	-	57,288,946	57,288,946
Mutual funds	17,277,760	-	-	-	17,277,760
Domestic common stock	6,437,668	-	-	-	6,437,668
Domestic fixed income	12,187,204	-	-	-	12,187,204
Total assets at fair value	$ 41,894,602	$ -	$ -	$ 127,361,420	$ 169,256,022

	2017				
	Level 1	Level 2	Level 3	NAV as Practical Expedient	Total
Assets					
Cash and cash equivalents	$ 16,817,970	$ -	$ -	$ -	$ 16,817,970
Private equity, venture capital and other limited partnerships	-	-	-	19,887,222	19,887,222
Commingled funds	-	-	-	72,062,140	72,062,140
Hedge funds	-	-	-	54,614,664	54,614,664
Mutual funds	11,266,609	-	-	-	11,266,609
Domestic common stock	8,846,735	-	-	-	8,846,735
Domestic fixed income	10,688,137	-	-	-	10,688,137
Total assets at fair value	$ 47,619,451	$ -	$ -	$ 146,564,026	$ 194,183,477

Included in plan assets are net investment related receivables/(payables) of $1,856,576 and $438,555 as of December 31, 2018 and 2017, respectively. There were no transfers to or from level 3 for the years ended December 31, 2018 and 2017.

Expected Contributions

The Institution anticipates contributing $8,700,000 to the Qualified Plan in 2019.

Estimated Future Benefit Payments

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

Years	Benefit Payments
2019	$ 14,476,679
2020	15,028,820
2021	15,094,776
2022	15,273,263
2023	15,295,063
2024–2028	79,114,176

Amortization of Gains and Losses
Amortization of the net gain or loss resulting from experience different from that assumed and from changes in assumptions (excluding asset gains and losses not yet reflected in market-related value) is included as a component of net period benefit income (cost) for the year. If, as of the beginning of the year, that net gain or loss exceeds 10% of the greater of the projected benefit obligation and the market-related value of plan assets, the amortization is that excess divided by the average remaining service period until 25 years of service of participating employees expected to receive benefits under the plan.

Supplemental Retirement Plan
In December 2017 the supplemental retirement plan and "Rabbi" Trust were terminated as there were no longer any participants eligible for benefits under the Plan. The accrued supplemental retirement obligation, funded through the Institution's fringe benefit pool and rate agreement was matched by a "Rabbi" Trust and recorded as an asset on the balance sheet. However, the Institution was obligated to use the funds only for the supplemental retirement or similar benefits by the Institution's cognizant agency, the Office of Naval Research (ONR). During December 2017, the "Rabbi" Trust was terminated and the assets reverted to the Institution. The corresponding gain of $11,420,679 is recorded in the nonoperating section of the statements of activities. The Institution then used these assets to fund additional contributions to the Qualified Plan totaling $11,420,679. The return of trust assets to the Institution and subsequent funding of the Qualified Plan was approved by ONR. In 2016 trust assets were invested in Money Market, Bond and S&P 500 Index Funds. These assets were Level 1 investments within the fair value hierarchy table.

The following table summarizes changes to the corresponding asset and liability of the Supplemental Plan:

	2018	2017
Change in nonreturnable funding "Rabbi" Trust		
Nonreturnable funding at beginning of year	$ -	$ 10,918,509
Investment return	-	502,170
Benefits paid	-	-
Assets reverted to Institution upon termination	-	(11,420,679)
Nonreturnable funding "Rabbi" Trust at end of year	$ -	$ -

10. Other Postretirement Benefits

In addition to providing retirement plan benefits, the Institution provides certain health care benefits for retired employees and their spouses. Substantially all of the Institution's employees may become eligible for the benefits if they reach normal retirement age (as defined) or elect early retirement after having met certain time in service criteria.

Effective January 1, 2012 the Trust agreement which had been funding the Plan was amended to include active employees. Accordingly, assets of the Plan were then decoupled and recorded on the Institution's Statement of Financial Position as investments designated for retiree and active medical plans along with a corresponding increase to the accrued postretirement liability. Actual returns from investments designated for retiree and active medical plans totaled losses of $941,856 and $1,680,496 for the years ended December 31, 2018 and 2017, respectively, and are presented in the nonoperating section of the Statement of Activities, net of administrative fees of $78,341 and $112,021 for 2018 and 2017, respectively. Health care benefits for active employees funded from these investments totaled $0 for the years ended December 31, 2018 and 2017, respectively, and are also presented in the nonoperating section of the Statement of Activities.

	Other Postretirement Benefits	
	2018	**2017**
Change in benefit obligation		
Benefit obligation at beginning of year	$ 33,620,893	$ 33,988,547
Adjustment to reflect change from plan amendment		-
Service cost	475,802	518,147
Interest cost	1,252,215	1,463,875
Benefits paid, net of participant contributions	(917,842)	(1,045,356)
Actuarial (gain) loss	(5,821,649)	(1,304,320)
Clarifying amendment and burial benefit	-	-
Benefit obligation at end of year	28,609,419	33,620,893
Change in plan assets		
Fair value of plan assets at beginning of year	-	-
Employer contributions	917,842	1,045,356
Actual return on plan assets	-	-
Benefits paid, net of participant contributions	(917,842)	(1,045,356)
Fair value of plan assets at end of year	-	-
Funded status	$ (28,609,419)	$ (33,620,893)
Amounts recognized in the statement of financial position consist of		
Accrued benefit liability	$ 28,609,419	$ 33,620,893
Net amount recognized	$ 28,609,419	$ 33,620,893
Amounts recognized in net assets without donor restrictions		
Net prior service credit	$ -	$ (610,186)
Net actuarial loss	1,019,475	6,967,327
Net amount recognized	$ 1,019,475	$ 6,357,141
Components of net periodic benefit cost		
Service cost	$ 475,802	$ 518,147
Interest cost	1,252,215	1,463,875
Expected return on plan assets	-	-
Amortization of prior service credit	(610,186)	(813,577)
Amortization of net actuarial loss	359,495	519,732
Clarifying amendment and burial benefit	-	-
Net periodic benefit cost	$ 1,477,326	$ 1,688,177
Other changes in plan assets and benefit obligations recognized in net assets without donor restrictions		
Amortization of prior service credit	$ 610,186	$ 813,577
Amortization of net actuarial loss	(359,495)	(519,732)
Net actuarial gain	(5,821,649)	(1,304,320)
Total recognized in nonoperating expense	$ (5,570,958)	$ (1,010,475)

The Institution recognizes the net periodic benefit cost in the nonoperating section of the statement of activities. This amounted to $1,477,326 and $1,688,177 for the years ended December 31, 2018 and 2017, respectively.

	2018	2017
Weighted-average assumptions used to determine benefit obligations at December 31		
Discount rate	4.4 %	3.8 %
Weighted-average assumptions used to determine net periodic benefit cost for years ended December 31		
Discount rate	3.8 %	4.4 %
Expected long-term rate of return on plan assets	N/A	N/A

The plan does not provide prescription drug benefits for post-65 retirees; therefore, there is no anticipated Medicare employer subsidy.

	2018		2017	
	Pre-65	Post-65	Pre-65	Post-65
Assumed health care cost trend rates at December 31,				
Health care cost trend rate assumed for next year	7.0 %	5.0%	7.0 %	5.0%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	5.0 %	5.0 %	5.0 %	5.0 %
Year that the rate reaches the ultimate trend rate	2023	2018	2023	2018

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plan. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	2018		2017	
	One-Percentage-Point Increase in Trend	One-Percentage-Point Decrease in Trend	One-Percentage-Point Increase in Trend	One-Percentage-Point Decrease in Trend
Effect on total of service cost and interest cost components	$ 348,224	$ (268,069)	$ 416,749	$ (320,527)
Effect on year-end postretirement benefit obligation	4,219,683	(3,402,160)	5,451,248	(4,330,311)

Plan Assets
Due to the change in the “Rabbi Trust” agreement, there were no plan assets at December 31, 2018 and 2017.

Expected amounts amortized from net assets without donor restrictions into net periodic pension cost for the next fiscal year	
Amortization of net prior service cost	$ -
Amortization of net loss	-

Expected Contributions

The Institution provides contributions as expenses are incurred. The Institution expects contributions to the Retiree Medical Plan in 2019 to be equal to the expected benefit in 2019 of $1,264,960.

Estimated Future Benefit Payments

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

Years	Benefit Payments
2019	$ 1,264,960
2020	1,323,748
2021	1,408,491
2022	1,450,785
2023	1,503,380
2024–2028	7,801,167

11. Net Assets

The Institution's endowment consists of 149 individual funds established for a variety of purposes. The endowment includes both donor-restricted endowment funds and funds designed by the Board of Trustees to function as endowments. 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.

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

	2018		
	Without Donor Restrictions	With Donor Restrictions	Total
Endowment funds			
Perpetual in nature	$ -	$ 100,428,976	$ 100,428,976
Purpose restricted	-	224,699,740	224,699,740
Board designated funds	92,408,208	-	92,408,208
Endowment net assets	92,408,208	325,128,716	417,536,924
Purpose restricted - research	-	15,204,383	15,204,383
Purpose restricted - education	-	6,205,889	6,205,889
Time restricted and other	-	4,081,548	4,081,548
Designated	2,399,034	-	2,399,034
Pension and postretirement benefits	(119,597,259)	-	(119,597,259)
Undesignated	11,233,816	-	11,233,816
Total net assets	$ (13,556,201)	$ 350,620,536	$ 337,064,335

	2017		
	Without Donor Restrictions	With Donor Restrictions	Total
Endowment funds			
Perpetual in nature	$ -	$ 97,766,607	$ 97,766,607
Purpose restricted	-	263,121,390	263,121,390
Board designated funds	76,821,967	-	76,821,967
Endowment net assets	76,821,967	360,887,997	437,709,964
Purpose restricted - research	-	14,398,458	14,398,458
Purpose restricted - education	-	4,807,450	4,807,450
Time restricted and other	-	3,838,559	3,838,559
Designated	5,065,547	-	5,065,547
Pension and postretirement benefits	(136,423,894)	-	(136,423,894)
Undesignated	13,651,493	-	13,651,493
Total net assets	$ (40,884,887)	$ 383,932,464	$ 343,047,577

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

	2018		
	Without Donor Restrictions	With Donor Restrictions	Total
Net assets beginning of year	$ 76,821,967	$ 360,887,997	$ 437,709,964
Investment return			
Investment income, net of fees	3,805	13,600	17,405
Net depreciation	(550,602)	(1,967,881)	(2,518,483)
Total investment return	(546,797)	(1,954,281)	(2,501,078)
New gifts	-	2,700,023	2,700,023
Appropriation of endowment assets for expenditure under spending policy	(3,449,367)	(16,686,633)	(20,136,000)
Additional appropriations, net	(66,958)	-	(66,958)
Removal of previously imposed restrictions	19,654,719	(19,654,719)	-
Change in split interest agreements	(5,356)	(163,671)	(169,027)
Net assets end of year	$ 92,408,208	$ 325,128,716	$ 417,536,924

	2017		
	Without Donor Restrictions	**With Donor Restrictions**	**Total**
Net assets beginning of year	$ 72,872,311	$ 343,014,264	$ 415,886,575
Investment return			
Investment income, net of fees	(586,570)	(2,227,863)	(2,814,433)
Net appreciation	7,702,853	34,718,037	42,420,890
Total investment return	7,116,283	32,490,174	39,606,457
New gifts	-	1,650,100	1,650,100
Appropriation of endowment assets for expenditure under spending policy	(3,484,132)	(16,427,868)	(19,912,000)
Additional appropriations, net	352,012	-	352,012
Change in split interest agreements	(34,507)	161,327	126,820
Net assets end of year	$ 76,821,967	$ 360,887,997	$ 437,709,964

12. Liquidity and Availability of Financial Assets

The Institution's financial assets available within one year of the balance sheet date for general expenditures are as follows:

Cash and cash equivalents	$ 6,724,602
Accounts receivable billed and unbilled	15,360,486
Receivable for investments sold	4,478,356
Other receivables	284,134
Pledges receivable	1,038,324
	$ 27,885,902

The Institution's endowment funds consist of donor-restricted and Board designated funds. Income from donor-restricted funds are restricted by purpose and are not available for general expenditure. The Institution defines general expenditures as any costs included in total expenses from operating activities. As described in Note 2 the Board designated endowment has a spending rate of 5 percent and $4,478,356 will be available for general use within the next twelve months.

The Institution's liquidity management policy is to structure its financial assets to be available as its general expenditures, liabilities and other obligations come due. In addition the Institution invests cash in excess of daily liquidity needs in short-term investments. To manage liquidity needs the Institution has committed lines of credit in the amount of $45,000,000 (see Note 8). It is management's intent to extend and or renew these lines of credit by September 30, 2019 into 2020. In addition the Institution has Board designated funds in the amount of $92,408,208 which it could draw upon. Subsequent to December 31, 2018, the Institution withdrew $10,000,000 from its Board designated net assets to be utilized for general operating purposes. Additionally, after the $10,000,000 withdrawal, $14,998,686 of Board designated net assets are committed to fund certain research, education and other designated net assets at December 31, 2018. Both Board designated and donor-restricted endowment contain investments with lock-up provisions that would reduce the total investments that could be available. The Institution's endowment investments include a multi strategy short-term liquidity fund to provide for additional short-term liquidity needs.

This fund totaled $30,464,003 at December 31, 2018, and allows for daily withdrawals, (see Note 4 for redemption terms). Board designated funds are categorized as follows at December 31, 2018:

	2018	2017
Board designated for research	$ 30,336,928	$ 11,377,774
Board designated for research - Director discretionary	1,531,047	1,614,936
Board designated for general unsponsored progam support	59,782,842	63,058,448
Other	757,390	770,809
	$ 92,408,207	$ 76,821,967

During 2018, the Institution received approval from the Office of the Massachusetts Attorney General to redirect $19,654,719 of a donor-imposed restricted endowment fund for which the original intent of the gift was no longer applicable with the current portfolio of Institutional programs. The redirection of this fund is now classified as without donor restrictions within the Board designated endowment funds to be used for general scientific support.

13. Commitments and Contingencies

The Defense Contract Audit Agency (DCAA) is responsible for auditing indirect charges to grants and contracts on behalf of the ONR. The Institution and the ONR have settled the years through 2016 with no findings or adjustments for unallowable costs. The current indirect cost recovery rates, which are fixed, include the impact of prior year settlements. The DCAA issued an audit report on the completed audit of indirect costs for the years ended December 31, 2012 through 2014 on April 6, 2017. ONR issued a letter to close 2015 with no findings or adjustments for allowable costs on November 19, 2018. ONR then issued a letter to close 2016 with no findings or adjustments for unallowable costs on March 21, 2019. 2017 costs are still under review by DCAA, however, in April 2019 DCAA indicated during their exit conference that no findings or questioned costs have been identified to date.

The Institution is a defendant in legal proceedings incidental to the nature of its operations. The Institution believes that the outcome of these proceedings will not materially affect its financial position.

14. Related Party Transactions

The Institution’s subcontracts to subgrantee organizations in which an individual associated with the subgrantee organization is also a member of the Institution’s Board of Trustees or Corporation totaled $0 and $22,548 for the years ended December 31, 2018 and 2017, respectively. These subcontracts may include federal pass-through awards. The Institution also has other transactions such as legal services and other items with organizations where members of the Board of Trustees or Corporation are affiliated with the organizations. Total expenditures for these legal, publication, research and student transactions were $9,902 and $486,445 for the years ended December 31, 2018 and 2017, respectively.

The Institution has loans due from various employees for education advances and computer purchases. The amounts outstanding are $646,900 and $641,362 at December 31, 2018 and 2017, respectively.

15. Schedule of Functional Expenses

The Statement of Activities presents expenses by functional programs without distinguishing program versus supporting service expenses (or facilities and administrative costs). (F&A) expenses totaled $59,661,906 million for 2018 and have been allocated among the categories presented utilizing a modified total direct cost (MTDC) basis. MTDC is a federal government prescribed methodology for allocating F&A costs. While facilities costs are allocated primarily on a square footage basis, administrative costs are allocated proportionally by the total of net direct costs per program plus the program's share of facilities costs. Net program direct costs include total direct costs per program reduced by certain costs such as equipment, subcontracts (by statute) and other cost attributes negotiated with the Institution's cognizant agency specific to the Institution which by nature would lead to a disproportional allocation of F&A costs. Functional expenses for the year ended December 31, 2018 and summarized information for 2017 are as follows:

	Research	Marine Operations	Academic Programs	Other Institution Activities	Unsponsored Programs	Ships and Submersibles	2018 Total	2017 Total
Salaries	$ 33,347,703	$ 673,051	$ 2,172,751	$ 2,023,391	$ 3,973,378	$ 9,385,564	$ 51,575,837	$ 48,548,705
Fringe Benefits	14,596,358	301,265	986,305	898,916	1,804,042	3,364,978	21,951,865	19,757,805
Equipment	8,164,404	952,573	18,746	15,282	442,273	164,586	9,757,865	12,496,867
Subcontracts	11,417,643	317,806	-	-	404	-	11,735,853	12,003,713
Supplies	8,500,668	112,325	47,558	72,076	348,172	1,178,941	10,259,740	9,843,682
Travel	3,287,383	50,327	149,779	223,963	247,634	538,527	4,497,613	3,897,841
Outside Services	2,323,081	562,672	56,090	514,773	98,467	480,592	4,035,675	3,255,863
Utilities	-	-	-	228	-	-	228	401
Depreciation	-	-	-	-	-	-	-	-
Interest	-	-	-	131,370	-	-	131,370	76,609
Professional Services	86,116	29,037	-	125,553	-	2,500	243,205	353,836
Repairs and Maintenance	1,303,588	1,666,185	9,498	134,114	41,992	2,997,530	6,152,908	5,719,093
Insurance	58,944	-	19,971	549,200	148,402	308,084	1,084,601	1,008,246
Other	14,272,284	4,946,113	5,469,932	885,410	12,476,152	2,250,665	40,300,557	45,849,908
Ships Fuel	637	97	-	-	-	3,071,845	3,072,579	2,921,149
Facilities and Administration	45,283,717	2,296,839	2,061,341	2,143,609	2,421,938	5,454,462	59,661,906	54,675,151
Total operating exepnses	142,642,524	11,908,291	10,991,971	7,717,885	22,002,853	29,198,275	224,461,799	220,408,868
Nonoperating expense	-	-	-	5,877,988	-	-	5,877,988	4,664,409
Total	$ 142,642,524	$ 11,908,291	$ 10,991,971	$ 13,595,873	$ 22,002,853	$ 29,198,275	$ 230,339,787	$ 225,073,277

The category Facilities and Administration in the Schedule of Functional Expenses for the year ended December 31, 2018 includes costs associated with departmental administration $12,349,944, sponsored program administration of $1,166,464, library $1,219,080 and general administration of $23,560,075.

16. Subsequent Event

Management evaluated all events or transactions that occurred after December 31, 2018 through July 11, 2019, the date these financial statements were issued and has concluded that there were no such events or transactions that require adjustment to the audited financial statements or disclosure in the notes to the audited financial statements.