

**Bermuda Institute of
Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)**

Basic Financial Statements,
Management's Discussion and Analysis and
Uniform Guidance Schedules
Together With Independent Auditors' Reports

December 31, 2022

**Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)**

Financial Statements
December 31, 2022

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Independent Auditors' Report

**The Board of Trustees
Bermuda Institute of Ocean Sciences (BIOS), Inc.**

Report on the Audit of the Financial Statements

Opinions

We have audited the accompanying financial statements of the business-type activities of Bermuda Institute of Ocean Sciences (BIOS), Inc. (a nonprofit organization), a blended component unit of Arizona State University, as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise Bermuda Institute of Ocean Sciences (BIOS), Inc.'s basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the business-type activities of Bermuda Institute of Ocean Sciences (BIOS), Inc. as of December 31, 2022, and the changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

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

Responsibilities of Management for the Financial Statements

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

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about BIOS, Inc.'s ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

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

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

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

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

Other Matters

Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Report on Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying schedule of expenditures of federal awards on pages 22 and 23 is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, and is not a required part of the 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 financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated, in all material respects, in relation to the financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated June 12, 2023 on our consideration of BIOS'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 BIOS'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 BIOS's internal control over financial reporting and compliance.

PKF O'Connor Davies, LLP

June 12, 2023

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Management's Discussion and Analysis (Unaudited)
December 31, 2022

Introduction Overview of the Financial Statements and Financial Analysis

This section of the Bermuda Institute of Ocean Sciences (BIOS) Inc. annual financial report presents management's discussion and analysis of the financial performance of BIOS for the fiscal year December 31, 2022. The discussion and analysis has been prepared by management and should be read in conjunction with the accompanying financial statements and footnotes.

Reporting Entity

Bermuda Institute of Ocean Sciences (BIOS), Inc., is a US nonprofit marine science research and education institute located in St. George's, Bermuda. BIOS research programs investigate the role of the ocean in global climate, health of coral reefs and international collaborative efforts beyond Bermuda waters. Bermuda's unique location allows researchers to access deep ocean, furthering our understanding of the biological, chemical and physical processes that underpin the ocean's role in regulating the Earth's climate. BIOS owns and operates the R/V Atlantic Explorer which is equipped with navigation, laboratory, technical systems and equipment that is instrumental in servicing sponsored research.

Education is a key aspect of BIOS's mission, directly linking our scientific research to hands-on learning opportunities for international and local students. BIOS offers education programs from the grade school level to university and internship opportunities. Educator workshops and visiting groups also complement our educational offerings.

In 2021 BIOS became a blended component unit of Arizona State University.

Introduction to the Financial Statements

BIOS's financial statements include the following:

Statement of Net Position: The Statement of Net Position includes all assets and liabilities. Assets and liabilities are reported on an accrual basis as of December 31, 2022.

This statement is presented with three major categories: assets, liabilities and net position. The assets are classified between current and noncurrent. The current assets include cash and cash equivalents, short term investments, accounts receivable, inventory and prepaid expenses. The noncurrent assets include capital assets, long-term investments, and net receivables due in excess of a year.

Liabilities are also classified between current and noncurrent. Current liabilities include accounts payable, loans payable within one year and unearned revenues. Noncurrent liabilities include long term debt payable after one year.

Net position consists of net investment in capital assets, restricted expendable and nonexpendable and unrestricted net position.

Statement of Revenues, Expenses and Changes in Net Position: The Statement of Revenues, Expenses, and Changes in Net Position presents the revenues earned and expenses incurred during the year on an accrual basis.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Management's Discussion and Analysis (Unaudited)
December 31, 2022

Financial Overview

Net Position: Net position may serve over time as a useful indicator of an entity's financial position. The following table reflects the condensed Statement of Net Position of BIOS for December 31, 2022 and 2021 showing assets exceeded liabilities by \$38.6M at December 31, 2022.

Condensed Summary of Net Position
December 31, 2022 and 2021

	2022	2021	Increase / (Decrease)
ASSETS			
Current Assets	\$ 7,350,392	\$ 8,436,524	\$ (1,086,132)
Noncurrent Assets	18,643,129	24,536,123	(5,892,994)
Capital Assets, Net	15,031,504	15,171,949	(140,445)
Total Assets	41,025,025	48,144,596	(7,119,571)
LIABILITIES			
Current Liabilities	1,627,313	7,027,399	(5,400,086)
Noncurrent long term obligations	807,287	869,445	(62,158)
Total Liabilities	2,434,600	7,896,844	(5,462,244)
NET POSITION			
Net Investment in Capital Assets	14,162,060	8,812,736	5,349,324
Restricted:			
Nonexpendable	10,194,641	10,169,141	25,500
Expendable	14,481,920	18,538,978	(4,057,058)
Unrestricted	(248,196)	2,726,897	(2,975,093)
Total Net Position	\$ 38,590,425	\$ 40,247,752	\$ (1,657,327)

Assets: Total assets decreased by \$7.1M during the year ended December 31, 2022. Current assets decreased \$1.1M between years while noncurrent assets decreased by nearly \$5.9M. The decreases are primarily due to the liquidation of the credit facility of \$5.5M in December 2022 and a \$1.4M reduction in total outstanding receivables at year end.

Liabilities: Current liabilities decreased by nearly \$5.4M due to liquidation of the credit facility. Noncurrent liabilities decreased by \$0.1M relating to debt servicing on the sole remaining debt instrument with a major local utility.

Net Position: The \$1.6M decrease in net position is due to unrealized losses on investments due to market performance.

Change in Net Position: The following table compares the revenues and expenses for the current and previous year.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Management's Discussion and Analysis (Unaudited)
December 31, 2022

Condensed Summary of Revenues, Expenses and Changes in Net Position
Years Ended December 31, 2022 and 2021

	<u>2022</u>	<u>2021</u>	<u>Increase / (Decrease)</u>
OPERATING REVENUE			
Research grants and contracts	\$ 11,470,578	\$ 9,401,465	\$ 2,069,113
Tuition and fees	457,024	317,481	139,543
Auxiliary enterprises	490,828	463,478	27,350
Total Operating Revenue	<u>12,418,430</u>	<u>10,182,424</u>	<u>2,236,006</u>
OPERATING EXPENSES			
Instruction	976,162	667,162	309,000
Research	10,594,041	8,348,918	2,245,123
Institutional support	2,755,077	2,865,889	(110,812)
Operation and maintenance of plant	753,913	530,505	223,408
Auxiliary enterprises	176,461	215,484	(39,023)
Academic support	403,393	331,149	72,244
Depreciation	2,079,731	2,163,788	(84,057)
Total Operating Expenses	<u>17,738,778</u>	<u>15,122,895</u>	<u>2,615,883</u>
Operating Loss	(5,320,348)	(4,940,471)	(379,877)
NONOPERATING REVENUES (EXPENSES)			
Private gifts	2,541,071	1,960,861	580,210
Investment (loss) return	(2,979,180)	1,854,949	(4,834,129)
Other (loss) revenues	(1,003)	4,570	(5,573)
Affiliation services revenue	4,381,514	3,200,000	1,181,514
Interest on debt	(279,381)	(412,360)	132,979
Loss on disposals	-	(96,261)	96,261
Net Nonoperating Revenues	<u>3,663,021</u>	<u>6,511,759</u>	<u>(2,848,738)</u>
Change in Net Position	<u>(1,657,327)</u>	<u>1,571,288</u>	<u>(3,228,615)</u>
NET POSITION			
Beginning of year	<u>40,247,752</u>	<u>38,676,464</u>	<u>1,571,288</u>
End of year	<u>\$ 38,590,425</u>	<u>\$ 40,247,752</u>	<u>\$ (1,657,327)</u>

Revenues: Total operating revenue increased by \$2.2M, or 22% to over \$12.4M in 2022 with the most significant increase occurring in Research grants and contract revenues. In Q1 2022, the R/V Atlantic Explorer underwent major shipyard maintenance, increasing research revenues by over \$2.2M. Tuition and auxiliary enterprise revenues also improved with a 21% increase due to the addition of a new summer course.

**Bermuda Institute of Ocean Sciences (BIOS), Inc.
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Management's Discussion and Analysis (Unaudited)
December 31, 2022

Expenses: Total operating expenses increased by \$2.6M or 17%. Research expenditures increased by \$2.2M primarily related to bi-annual shipyard expenditures for the R/V Atlantic Explorer. Instruction and operation and maintenance of plant expenses increased as operations began to normalize from the impacts from the COVID-19 pandemic.

Nonoperating expenses and revenues: Total nonoperating activity decreased by \$2.8M. Unrealized losses on investments of \$3.0M were partially offset with other nonoperating activities.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Statement of Net Position
December 31, 2022

ASSETS

Current Assets

Cash and cash equivalents	\$ 3,135,470
Grants and accounts receivable	1,729,395
Contributions receivable	2,379,659
Inventory and prepaid expenses	<u>105,868</u>
Total Current Assets	<u>7,350,392</u>

Noncurrent Assets:

Endowment cash	14,064,701
Investments	2,448,808
Contributions receivable, net	2,129,620
Capital assets, net	<u>15,031,504</u>
Total Noncurrent Assets	<u>33,674,633</u>

\$ 41,025,025

LIABILITIES AND NET POSITION

Liabilities

Current Liabilities

Accounts payable and accrued expenses	\$ 986,897
Unearned revenue	578,259
Loans payable	<u>62,157</u>
Total Current Liabilities	1,627,313

Noncurrent Liabilities

Loans payable	<u>807,287</u>
Total Liabilities	<u>2,434,600</u>

Net Position

Net investment in capital assets	14,162,060
Restricted	
Nonexpendable	10,194,641
Expendable	14,481,920
Unrestricted	<u>(248,196)</u>
Total Net Position	<u>38,590,425</u>

\$ 41,025,025

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Statement of Revenues, Expenses and Changes in Net Position
Year Ended December 31, 2022

OPERATING REVENUE

Research grants and contracts	\$ 11,470,578
Tuition and fees	457,024
Auxiliary enterprises	490,828
Total Operating Revenue	<u>12,418,430</u>

OPERATING EXPENSES

Instruction	976,162
Research	10,594,041
Institutional support	2,755,077
Operation and maintenance of plant	753,913
Auxiliary enterprises	176,461
Academic support	403,393
Depreciation	2,079,731
Total Operating Expenses	<u>17,738,778</u>

 Operating Loss (5,320,348)

NONOPERATING REVENUES (EXPENSES)

Contributions	2,541,071
Investment loss	(2,979,180)
Other losses	(1,003)
Affiliation services revenue	4,381,514
Interest on debt	(279,381)
Net Nonoperating Revenues	<u>3,663,021</u>

 Change in Net Position (1,657,327)

NET POSITION

Beginning of year	<u>40,247,752</u>
End of year	<u>\$ 38,590,425</u>

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Statement of Cash Flows
Year Ended December 31, 2022

CASH FLOWS FROM OPERATING ACTIVITIES	
Tuition and fees	\$ 455,181
Research grants and contracts	12,792,091
Sales and services of auxiliary enterprises	394,599
Payments of employees for salaries and benefits	(7,975,959)
Payments to suppliers	<u>(7,439,512)</u>
Net Cash from Operating Activities	<u>(1,773,600)</u>
CASH FLOWS FROM NON CAPITAL FINANCING ACTIVITIES	
Affiliation services revenue	4,381,514
Contributions	<u>2,541,071</u>
Net Cash from Noncapital Financing Activities	<u>6,922,585</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Purchases of capital assets	(1,939,286)
Principal paid on capital debt	(5,489,768)
Interest paid on capital debt	<u>(282,268)</u>
Net Cash from Capital and Related Financing Activities	<u>(7,711,322)</u>
CASH FLOWS FROM INVESTING ACTIVITIES	
Proceeds from sales of investments	<u>14,813,585</u>
Net Increase in Cash and Cash Equivalents	12,251,248
CASH EQUIVALENTS AND ENDOWMENT CASH	
Beginning of year	<u>4,948,923</u>
End of year	<u>\$ 17,200,171</u>
RECONCILIATION OF OPERATING LOSS TO NET CASH FROM OPERATING ACTIVITIES	
Operating loss	\$ (5,320,348)
Adjustments to reconcile net loss to net cash from operating activities	
Depreciation expense	2,079,731
Changes in assets and liabilities	
Grants and accounts receivable	(809,461)
Contributions receivable, net	2,243,456
Inventory and prepaid expenses	3,614
Accounts payable and accrued expenses	265,606
Unearned revenues	<u>(236,198)</u>
Net Cash from Operating Activities	<u>\$ (1,773,600)</u>

See notes to financial statements

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

1. Organization

Bermuda Institute of Ocean Sciences (BIOS), Inc., formerly The Bermuda Biological Station for Research, Inc., founded in 1903, was incorporated in the State of New York in 1926 as a U.S. not-for-profit research organization. BIOS is exempt from U.S. income taxes pursuant to Sections 501(c)(3) and 509(a) of the Internal Revenue Code. BIOS is also a Bermuda Registered Charity (Reg #116).

On October 26, 2021, BIOS and Arizona State University (“ASU”), a related party, executed a services and affiliation agreement. Based on the terms of the agreement and in accordance with Government Accounting Standards Board (GASB) Statement No. 80, BIOS is considered a blended component unit of Arizona State University for financial reporting purposes. Accordingly, the financial statements of BIOS are included in Arizona State University’s Annual Comprehensive Financial Report.

BIOS’s mission is to seek and share fundamental knowledge of the oceans through state-of-the-art scientific research, world-class field expeditions, and comprehensive educational experiences.

The research conducted at BIOS is relevant to the waters surrounding Bermuda, as well as the global Earth system, and is multidisciplinary, spanning the biological, chemical, geological, and physical sciences. BIOS researchers are active partners in regional and international research collaborations that are working to address some of the most pressing issues of our time including climate change, marine conservation, ecosystem health, and natural-disaster risk assessment.

2. Summary of Significant Accounting Policies

Basis of Presentation

The financial statements of BIOS are presented under the economic resources measurement focus and prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America (US GAAP) applicable to government entities, established primarily by the Governmental Accounting Standards Board (GASB).

GASB establishes standards for external financial reporting and requires that resources be classified for accounting and reporting purposes into the following net position categories.

- *Net investment in capital assets:* Capital assets, net of accumulated depreciation, and outstanding principal balances of debt attributable to the acquisition, construction, or improvement of those assets.
- *Restricted:*
 - Nonexpendable* – Net position subject to externally imposed stipulations that must be maintained permanently by BIOS.
 - Expendable* – Net position whose use by BIOS is subject to externally imposed stipulations that can be fulfilled by actions of BIOS pursuant to the stipulations or that expire by the passage of time.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

2. Summary of Significant Accounting Policies (continued)

Basis of Presentation (continued)

- *Unrestricted:*
Net position not subject to externally imposed stipulations that may be designated for specific purposes by action of management or the Board of Trustees, or may otherwise be limited by contractual agreements with outside parties.

When an expense is incurred that can be paid using either restricted or unrestricted resources, BIOS's policy is to first apply the expense towards restricted resources, and then towards unrestricted resources.

Use of Estimates

The presentation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Contributions

Contributions, including unconditional promises to give, are recognized as revenue in the period received or pledged. BIOS reports gifts as restricted support if they are received with donor stipulations that limit the use of the donated assets, or if they are restricted as support for future periods. When donor restrictions expire, that is, when a stipulated time restriction ends or purpose restriction is accomplished, expendable restricted net position is reclassified to unrestricted net position. Contributions of assets other than cash are recorded at their estimated fair value and are recorded as an increase in unrestricted net position unless the donor places restrictions on their use. Contributions due after one year are reported at their net present value. Amortization of the discount is recorded annually as additional contribution revenue over the anticipated collection period of the pledge.

Operating Expenses

Expenses are categorized as operating or nonoperating per GASB. BIOS reports operating expenses by functional category (instruction, research, etc.) in the statement of revenues, expenses, and changes in net position and displays expenses by their natural classification (personal services and benefits, supplies and services and depreciation).

Foreign Currency

BIOS's reporting currency is United States dollars ("USD") and the functional currency is Bermuda dollars ("BMD"). There are no foreign currency transaction gains or losses from transacting in BMD because the transactions denominated in BMD are translated to USD at par as the BMD is pegged to the USD at the exchange rate of one BMD to one USD.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

2. Summary of Significant Accounting Policies (continued)

Cash Equivalents and Endowment Cash

All highly liquid investments, with maturities of three months or less at the time of purchase are considered cash equivalents. Endowment cash represents the liquidated proceeds of the BIOS endowment fund at year end due to the BIOS appointment of a new investment manager. The following is a reconciliation of cash equivalents and endowment cash reported on the statement of cash flows at December 31, 2022:

Cash equivalents	\$ 3,135,470
Endowment cash	<u>14,064,701</u>
	<u><u>17,200,171</u></u>

Allowance for Uncollectible Receivables

An allowance for uncollectible receivables is estimated based on a combination of write-off history, aging analysis and any specific known troubled accounts. Management believes all receivables are fully collectible, therefore, no allowance for doubtful accounts is recognized at year-end.

Inventory

Inventory is reported at the lower of cost or net realizable value (first in, first out) and consists of glider batteries, gift shop merchandise, cafeteria, laboratory and SCUBA supplies held for resale. Glider batteries are unit stores expensed at the time of deployment in glider missions.

Fair Value Measurements

BIOS follows the provisions of GASB Statement No. 72, "*Fair Value Measurement and Application*", which defines fair value and establishes a fair value hierarchy organized into three levels based upon the input assumptions used in pricing assets. Level 1 inputs have the highest reliability and are related to assets with unadjusted quoted prices in active markets. Level 2 inputs relate to assets with other than quoted prices in active markets which may include quoted prices for similar assets or liabilities or other inputs which can be corroborated by observable market data. Level 3 inputs are unobservable inputs and are used to the extent that observable inputs do not exist.

Pursuant to US GAAP guidance, alternative investments where fair value is measured using the Net Asset Value ("NAV") per share as a practical expedient are not categorized within the fair value hierarchy.

Investment Valuation and Income Recognition

Investments are carried at fair value. The fair value of alternative investments has been estimated using the NAV as reported by the management of the respective alternative investment. US GAAP provides for the use of NAV as a "Practical Expedient" for estimating fair value of alternative investments. NAV reported by each alternative investment fund is used as a practical expedient to estimate the fair value of BIOS's interest therein. Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis and dividends are recorded on the ex-dividend date.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

2. Summary of Significant Accounting Policies (continued)

Investment Valuation and Income Recognition (continued)

Realized and unrealized gains and losses are included in the determination of the change in net position.

Alternative investments consist of non-traditional, not readily marketable investments. The underlying investments of such funds, whether invested in stock or other securities, are generally not currently traded in a public market and typically are subject to restrictions on resale. Values determined by investment managers and general partners of underlying securities that are thinly traded or not traded in an active market may be based on historical cost, appraisals, a review of the investees' financial results, financial condition and prospects, together with comparisons to similar companies for which quoted market prices are available or other estimates that require varying degrees of judgment.

Because of the inherent uncertainty of valuations, the estimated fair values may differ significantly from the values that would have been used had a ready market for such investments existed or had such investments been liquidated, and those differences could be material.

Risk Disclosure

Interest Rate Risk - Interest rate risk is the risk that BIOS will incur losses in fair value caused by changing interest rates. BIOS has a formal investment policy that considers investment maturities as a means of managing its exposure to fair value losses arising from changing interest rates.

Custodial Credit Risk - Custodial credit risk is the risk that in the event of a bank failure, BIOS's deposits may not be returned to it. GASB Statement No. 40, "*Deposit and Investment Risk Disclosures – an amendment of GASB Statement No. 3*", directs that deposits be disclosed as exposed to custodial credit risk if they are not covered by depository insurance and the deposits are either uncollateralized, collateralized by securities held by the pledging financial institution or collateralized by securities held by the pledging financial institution's trust department but not in BIOS's name. Deposits held at financial institutions insured by the Federal Deposit Insurance Corporation ("FDIC") are insured up to \$250,000. BMD dollar deposits by charities held at financial institutions insured by the Bermuda Deposit Insurance Corporation ("BDIC") are insured up to \$25,000. Investment holdings at financial institutions insured by the Securities Investor Protection Corporation ("SIPC") are insured up to \$500,000 (\$250,000 for cash holdings). As of December 31, 2022, BIOS's uninsured cash, cash equivalents and endowment cash balances on deposit totaled approximately \$16,892,000. As of December 31, 2022, BIOS's uninsured investment holdings totaled approximately \$1,949,000. BIOS does not have a deposit policy for custodial credit risk, but has not experienced any losses in such accounts, and management believes it is not exposed to any significant risks related to these accounts.

Credit Risk - Credit risk is the risk that an issuer or other counterparty will not fulfill its specific obligation even without the entity's complete failure. BIOS does not have a formal credit risk policy.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

2. Summary of Significant Accounting Policies (continued)

Research Grants and Contracts Revenue Recognition

Grants to BIOS are either reimbursement of costs limited by the maximums stated in the grant or are fixed price contracts. Support under grants for reimbursement of costs is recognized in the same period and in an amount equivalent to the aggregate of the incurred underlying costs. Revenue from fixed price grants is recognized proportionately over the life of the grant, as defined in the contract.

Tuition and fees

Tuition and fees are recognized over the period the tuition and other services are provided. Prepayments are recorded as unearned revenue.

Capital Assets

Purchases of capital assets are recorded at cost. Gifts or contributions of capital assets are recognized at fair value at the time received. Capital assets are depreciated using the straight-line method over the estimated useful lives of the assets. When items are disposed, the cost and accumulated depreciation are eliminated from the records of account, and a gain or loss is reported in current income. Repair and maintenance charges that do not increase the lives of the assets are expensed as incurred.

Capital Assets of BIOS are depreciated over the following useful lives:

	<u>Useful Lives</u>
Buildings and improvements	20-40 years
Furniture, fixtures and equipment	5-15 years
R/V Atlantic Explorer	25 years

Asset Recoverability

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying value amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated undiscounted future cash flows, an impairment charge is recognized in the amount by which of the carrying amount of the asset exceeds the fair value of the asset. Management has concluded that an impairment charge for 2022 is not necessary.

Accounting for Uncertainty in Income Taxes

BIOS recognizes the effect of income tax positions only when they are more likely than not to be sustained. Management has determined that BIOS had no uncertain income tax positions that require financial statement recognition or disclosure. BIOS is no longer subject to examination by the applicable taxing jurisdictions for periods prior to 2019.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

2. Summary of Significant Accounting Policies (continued)

Recently Adopted Accounting Standards

In June 2017, the GASB Statement No. 87, “Leases”, which established a single model for lease accounting based on the concept that leases are a financing of a “right-of-use” underlying asset. This statement requires a lessee to recognize a lease liability and an intangible right-of-use lease asset and a lessor to recognize a lease receivable and a deferred inflow of resources/ The requirements of GASB Statement No. 87 are effective for BIOS’s fiscal year ended December 31, 2022. BIOS has completed its evaluation of the financial impact of GASB Statement No. 87 and determined that the implementation of this standard was not necessary as it did not have a material impact on its financial statements.

Subsequent Events

Management has evaluated subsequent events for disclosure and/or recognition in the financial statements through June 12, 2023, the date financial statements were available for issuance.

3. Concentrations of Financial Risk

Financial instruments that potentially subject BIOS to concentrations of credit and market risk consist principally of cash, cash equivalents, and endowment cash on deposits with financial institutions, investments held at financial institutions, and receivables.

The investment portfolio is diversified by type of investment and industry concentrations so that no individual investment, investment advisor, investment manager or group of investments represents a significant concentration risk.

At December 31, 2022 grants and accounts receivable from one grantor totaled approximately \$1,047,000. At December 31, 2022, gross contributions receivable due from one donor totaled approximately \$4,466,000.

For the year ended December 31, 2022 research grants and contracts from one grantor totaled approximately 77% of research grants and contracts. For the year ended December 31, 2022 contributions from two donors totaled approximately 39% of contributions.

4. Related Party Transactions

As part of ASU and BIOS’s services and affiliation agreement, ASU paid BIOS \$4,381,514.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

5. Contributions Receivable

Contributions receivable at December 31, 2022 are expected to be collected as follows:

Amount expected to be collected in:

One year or less	\$ 2,379,659
Year two	2,236,101
	4,615,760
Less:	
Discount (5% per annum) to present value	(106,481)
	\$ 4,509,279

6. Investments

BIOS investments consist of a fund managed by an independent fund manager. At December 31, 2022, BIOS had investments of \$2,448,808 in a treasury money market fund valued at level 2.

7. Capital Assets

Capital assets activity for the year ended December 31, 2022 is comprised of the following:

	Beginning Balance	Additions	Ending Balance
Non-depreciated capital assets			
Land and land improvements	\$ 486,850	\$ -	\$ 486,850
Depreciable Capital Assets			
Buildings and improvements	16,594,104	35,903	16,630,007
Furniture, fixtures & equipment	6,989,634	460,156	7,449,790
R/V Atlantic Explorer	13,789,619	1,443,227	15,232,846
	37,373,357	1,939,286	39,312,643
Total Capital Assets	37,860,207	1,939,286	39,799,493
Accumulated depreciation			
Buildings and improvements	9,233,896	414,832	9,648,728
Furniture, fixtures & equipment	4,612,891	557,084	5,169,975
R/V Atlantic Explorer	8,841,471	1,107,815	9,949,286
Total Accumulated Depreciation	22,688,258	2,079,731	24,767,989
Capital assets, net	\$15,171,949	\$ (140,445)	\$ 15,031,504

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

8. Loans Payable

Loans payable consist of the following at December 31, 2022:

Loan payable (unsecured) to Air Care Limited pursuant to the Energy Performance Contract, payable in monthly installments of \$10,438, including interest at 7.5%, due March, 2032.

\$ 869,444

Aggregate maturities of loans payable approximate \$62,000 in 2023, \$67,000 in 2024, \$72,000 in 2025, \$78,000 in 2026, \$84,000 in 2027 and \$507,000 thereafter. Interest expense totaled approximately \$279,000 for year ended December 31, 2022.

9. Sponsored Projects

Approximately 59% of revenues in 2022 are awards for sponsored projects (governments and other sources). The awards generally provide for recovery of both direct and indirect costs. The indirect costs covered by the awards are determined as a negotiated or agreed-upon percentage of direct costs with certain exclusions.

10. Operating Expenses by Natural Classification

Operating expenses by functional and natural classification for the year ended December 31, 2022, are summarized as follows:

	Personal Services and Benefits	Supplies and Services	Depreciation	Total
Instruction	\$ 504,800	\$ 471,362	\$ -	\$ 976,162
Research	4,308,979	6,285,062	-	10,594,041
Institutional support	2,054,600	700,477	-	2,755,077
Operation and maintenance of plant	303,929	449,984	-	753,913
Auxiliary enterprises	429,581	(253,120)	-	176,461
Academic support	367,289	36,104	-	403,393
Depreciation	-	-	2,079,731	2,079,731
Total Operating Expenses	<u>\$7,969,178</u>	<u>\$ 7,689,869</u>	<u>\$2,079,731</u>	<u>\$ 17,738,778</u>

11. Pension Plan

BIOS maintains a contributory pension plan for employees ages 23 and over who have worked at least 720 hours in any calendar year. Participation in the plan is mandatory for Bermudians and spouses of Bermudians until they are 65 years old. The plan is voluntary for all other employees. Each participating employee may contribute to the plan up to a maximum of 10% of their gross salary. Mandatory participants must contribute 5%. BIOS matches the employee contribution of 5% of gross salary in accordance with the plan documents and the Bermuda Occupational Pensions Act 1998. Pension expense for the year ended December 31, 2022 approximated \$235,000.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

12. Endowment Funds

Donor-restricted funds whose purpose is to provide long-term support for BIOS and its charitable programs are endowment funds. Net position of endowment funds are classified as restricted or unrestricted as determined by the directions of donors, where applicable, and the provisions of the laws of the State of New York. Absent donor stipulations to the contrary, the provisions of New York State law do not impose restrictions on the use of income or capital appreciation derived from the original gift.

BIOS adheres to the New York State Uniform Prudent Management of Institutional Funds Act (NYPMIFA). NYPMIFA includes provisions that differ from previous law, including the elimination of the historic dollar value rule with respect to endowment spending, establishment of new standards governing the expenditure and modification of restrictions on endowment funds, and revision of the prudence standard for the management and investment of endowment funds.

Interpretation of Law

BIOS interprets NYPMIFA as requiring the preservation of the fair value of the original gift as of the date of the gift absent explicit donor stipulations to the contrary. As a result of this interpretation, BIOS classifies as nonexpendable restricted (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts donated to the permanent endowment, and (c) accumulations to the permanent endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund. The remaining portion of the nonexpendable restricted endowment fund that is not classified in nonexpendable restricted is classified as expendable restricted until those amounts are appropriated for expenditure.

Investment Philosophy

The Fund has a long-term investment horizon and the trustees believe that asset allocation is the major determinant of investment performance. The asset allocation plan is based on a number of factors, including – projected spending needs, maintenance of sufficient liquidity to meet spending payments, and return objectives and risk tolerances. The asset allocation plan provides for diversification of assets to maximize the investment return and manage the endowment investments consistent with market conditions. Investments are made through recognized third-party providers of multimanager strategies.

In December 2022, BIOS and Arizona State University Foundation (“ASUF”) executed an Investment Services Agreement appointing ASUF as investment administrator. At yearend, BIOS liquidated its endowment assets to facilitate their transfer to ASUF.

Investment Return Objectives

BIOS has adopted investment and spending policies for the BIOS endowment fund (the Fund) with the core objective to provide a reliable source of long-term financial support. It is the desire of the trustees that the Fund achieves a balance of growth and stability and thereby, over the long term, earns a competitive rate available in the capital markets at the risk level prescribed for the Fund.

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

12. Endowment Funds (continued)

Spending Policy

It is BIOS policy to annually distribute up to 5% of a three-year moving average of the Fund's market value as of June 30 of each year. In 2022, the full 5% was eligible for distribution to support the operations of BIOS.

Cumulative investment returns in excess of the spending rate that are not donor-restricted are board designated endowment funds. Restricted endowment earnings represent cumulative investment returns which must be spent in accordance with the donors' intent. Permanently restricted endowments must be maintained in perpetuity.

Activity Summary

The following summarizes activity in endowment funds for year ended December 31, 2022:

	Unrestricted	Expendable Restricted	Nonexpendable Restricted	Total
Balance at January 1, 2022	\$ 1,973,026	\$ 5,713,394	\$ 10,169,141	\$ 17,855,561
Contributions	-	-	25,500	25,500
Investment management fees	(10,720)	(49,128)	-	(59,848)
Capital depreciation	(529,672)	(2,426,294)	-	(2,955,966)
Appropriated for expenditure	(139,228)	(635,817)	-	(775,045)
Balance at December 31, 2022	\$ 1,293,406	\$ 2,602,155	\$ 10,194,641	\$ 14,090,202

13. Expendable Restricted Net Position

Expendable restrictions are available for the purposes listed below as of December 31, 2022:

Scientific research	\$ 11,690,072
Education	2,335,871
Laboratory building	165,977
Future periods and administrative	290,000
	\$ 14,481,920

Investment return from nonexpendable restrictions held and subject to BIOS spending policy and appropriation is available to support the indicated activities at December 31, 2022:

Scientific research	\$ 5,183,193
Education	3,533,477
Laboratory building	350,000
General operations	1,127,971
	\$ 10,194,641

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Financial Statements
December 31, 2022

13. Expendable Restricted Net Position (continued)

Releases from expendable restricted net position consist of the following for the year ended December 31, 2022:

Scientific research	\$ 2,976,297
Education	887,049
Laboratory building	<u>28,485</u>
	<u>\$ 3,891,831</u>

* * * * *

**Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)**

Uniform Guidance Reports and Schedules

December 31, 2022

**Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)**

**Schedule of Expenditures of Federal Awards
Year Ended December 31, 2022**

<u>Federal Grantor/Pass-through Grantor/Program or Cluster Title</u>	<u>Federal Assistance Listing Number</u>	<u>Grant Number</u>	<u>Pass-Through Entity Identifying Number</u>	<u>Passed Through to Subrecipients</u>	<u>Total Federal Expenditures</u>
Research and Development – Cluster:					
National Science Foundation:					
Geosciences					
Direct:					
Collaborative Research: In Situ Investigations and Historical Analysis of Eddy Impacts on coastal carbon chemistry and coral calcification	47.050	OCE-2123697		\$ -	\$ 205,685
Time Series Particle Flux Measurements in the Sargasso Sea	47.050	OCE-1829885		78,802	78,802
Operation of a Community Marine-Atmospheric Sampling Facility at Tudor Hill, Bermuda	47.050	OCE-1829686		-	88,237
The Panulirus Hydrographic Stations (Hydrostation S): Years 65-69	47.050	OCE-1633125		-	110,291
Operation of a Community Marine Atmospheric Sampling Facility at Tudor Hill, Bermuda 2021-2024	47.050	OCE-2123053		-	132,577
Collaborative Research: Biogeochemical and Physical Conditioning of Sub-Antarctic Mode Water in the Southern Ocean	47.050	OCE-1735783		-	29,274
Time Series Particle Flux Measurements in the Sargasso Sea	47.050	OCE-2122619		360,481	579,101
2021 Shipboard Scientific Support Equipment R/V Atlantic Explorer	47.050	OCE-2115202		-	402
2021 Oceanographic Instrumentation R/V Atlantic Explorer	47.050	OCE-2115198		-	986
Oceanographic Technical Services, Bermuda Institute of Ocean Sciences (BIOS), 2018-2022	47.050	OCE-1823636		-	686,534
Ship Operations R/V Atlantic Explorer	47.050	OCE-1822492		-	4,047,277
Ship Operations R/V Atlantic Explorer - COVID-19	47.050	OCE-1822492		-	86,428
Collaborative Research: The Bermuda Atlantic Time-Series Study: Sustained Biogeochemical, Ecosystem, and Ocean Change Observations and Linkages in the North Atlantic (Years 31-35)	47.050	OCE-1756105		-	1,266,225
NSFGEO-NERC: Collaborative Research: Using Time-series Field Observations to Constrain an Ocean Iron Model	47.050	OCE-1829844		-	17,684
Collaborative Research: High-resolution glider observations enable reassessment of export production in oligotrophic Sargasso Sea	47.050	OCE-1851224		-	77,441
2020 Shipboard Scientific Support Equipment R/V Atlantic Explorer	47.050	OCE-2018251		-	184,277
Quantifying the Drivers of Midwater Zooplankton Community Structure	47.050	OCE-1948162		6,330	161,356
Collaborative Research: Nitrous Oxide Reduction in Oxygen Minimum Zones: An Understudied but Critical Loss Term in Ocean Greenhouse Gas Cycling	47.050	OCE-2023430		-	148,803
REU Site: Collaborative Marine Research Experience at the Bermuda Institute of Ocean Sciences	47.050	OCE-2050858		-	153,512
CR: An Autonomous Profiling Vehicle for Concurrent Acoustic, Visual and Environmental Measurements in the Mesopelagic Ocean	47.050	OCE-2123560		-	6,842
CR: NSFGEO-NERC - Coupled Tropospheric Reactive Halogen Chemistry in the Subtropical Marine Boundary Layer	47.050	OCE-2109352		-	15,853
Collaborative Research: Metabolic Habitat Barriers Imposed on Tropical Diel Vertical Migrants	47.050	OCE-2127299		-	43,538
2022 Oceanographic Instrumentation R/V Atlantic Explorer	47.050	OCE-2217803		-	58,770
Collaborative Research: Zooplankton Mediation of Particle Formation in the Sargasso Sea	47.050	OCE-2023372		-	96,535
Pass-through funds:					
Woods Hole Oceanographic Institution, (WHOI) STC:Center for Chemical Currencies of a Microbial Planet	47.050	OCE-2019589	A101556	-	17,212
Total Geosciences				<u>445,613</u>	<u>8,293,642</u>
Biological Sciences					
Direct:					
Major Improvements of the Outdoor Mesocosm Facility at the Bermuda Institute of Ocean Sciences	47.074	OCE-2129274		-	218,019
Polar Programs					
Direct:					
Collaborative Research: Taking the Pulse of the Arctic Ocean - A US Contribution to the International Synoptic Arctic Survey	47.078	OCE-2052513		-	<u>302,287</u>
Total National Science Foundation				<u>445,613</u>	<u>8,813,948</u>

See independent auditors' report and notes to schedule of expenditures of federal awards

**Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)**

Schedule of Expenditures of Federal Awards
Year Ended December 31, 2022
(Continued)

<u>Federal Grantor/Pass-through Grantor/Program or Cluster Title</u>	<u>Federal Assistance Listing Number</u>	<u>Grant Number</u>	<u>Pass-Through Entity Identifying Number</u>	<u>Passed Through to Subrecipients</u>	<u>Total Federal Expenditures</u>
Research and Development – Cluster (continued) :					
U.S. Department of Defense					
Office of Naval Research					
Basic and Applied Scientific Research					
Direct:					
Oceanographic Technical Services, Bermuda Institute of Ocean Sciences (BIOS), 2018-2022	12.300	N00014-23-1-2032		\$ -	\$ 185,000
Ship Operations R/V Atlantic Explorer	12.300	N00014-23-1-2032		-	1,095,465
Total Office of Naval Research				-	1,280,465
Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes					
Pass-through funds:					
University of Miami Surface Water CO2 Measurements from Ships	11.432	NA15OAR4320064	SPC-001790	-	144,724
Woods Hole Oceanographic Institution, (WHOI) Synthesis of Water Column Carbonate Chemistry and Biological Indicators of Ocean Acidification for the Northeast Fisheries Science Center's Ecosystems Monitoring (EcoMon) Cruises	11.432	NA19OAR4320074	A101528	-	13,687
Total National Oceanic and Atmospheric Administration, Department of Commerce				-	158,411
National Aeronautics and Space Administration					
Science					
Direct:					
Impact of spatially and temporally varying thermal stress on reef functional diversity	43.001	80NSSC21K0603		-	30,719
Coral Reef Benthic Cover from Commercial High-Resolution Multispectral Satellite Imagery	43.001	80NSSC21K1159		99,607	140,431
Pass-through funds:					
The Regents of The University of California, Santa Barbara Bermuda Bio-Optics Project: Data for MOD IS Algorithm Maintenance	43.001	80NSSC18K0736	KK1872	-	17,568
Total National Aeronautics and Space Administration				99,607	188,718
Total Expenditures of Federal Awards				\$ 545,220	\$ 10,441,542

See independent auditors' report and notes to schedule of expenditures of federal awards

Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)

Notes to Schedule of Expenditures of Federal Awards
Year Ended December 31, 2022

1 Basis of Presentation

The accompanying Schedule of Expenditures of Federal Awards (the "Schedule") includes the federal award activity of Bermuda Institute of Ocean Sciences (BIOS), Inc., a blended component unit of Arizona State University under programs of the federal government for the year ended December 31, 2022. The information in this Schedule is presented in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* ("Uniform Guidance"). Because the Schedule presents only a selected portion of the operations of BIOS, it is not intended to and does not present the financial position, changes in net position or cash flows of BIOS.

2. Summary of Significant Accounting Policies

Expenditures reported on the Schedule are reported on the accrual basis of accounting. Such expenditures are recognized following the cost principles contained the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Pass-through entity identifying numbers are presented where available.

3. Indirect Cost Rate

BIOS has elected not to use the 10-percent de minimis indirect cost rate allowed under the Uniform Guidance.

Report 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

Independent Auditors' Report

**The Board of Trustees
Bermuda Institute of Ocean Sciences (BIOS), Inc.**

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of Bermuda Institute of Ocean Sciences (BIOS), Inc. (a blended component unit of Arizona State University) which comprise the statement of net position as of December 31, 2022, and the related statements of revenues, expenses and changes in net position and cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated June 12, 2023.

Report on Internal Control Over Financial Reporting

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

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

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

Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether BIOS's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the 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.

PKF O'Connor Davies, LLP

June 12, 2023



Report on Compliance for Each Major Federal Program and Report on Internal Control Over Compliance Required by the Uniform Guidance

Independent Auditors' Report

**The Board of Trustees
Bermuda Institute of Ocean Sciences (BIOS), Inc.**

Report on Compliance for Each Major Federal Program

Opinion on Each Major Federal Program

We have audited Bermuda Institute of Ocean Sciences (BIOS), Inc.'s (a blended component unit of Arizona State University) compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of BIOS's major federal programs for the year ended December 31, 2022. BIOS's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

In our opinion, BIOS 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 for the year ended December 31, 2022.

Basis for Opinion on Each Major Federal Program

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Our responsibilities under those standards and the Uniform Guidance are further described in the Auditors' Responsibilities for the Audit of Compliance section of our report.

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

Responsibilities of Management for Compliance

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

Auditors' Responsibilities for the Audit of Compliance

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

In performing an audit in accordance with generally accepted auditing standards, *Government Auditing Standards*, and the Uniform Guidance, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material noncompliance, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding BIOS's compliance with the compliance requirements referred to above and performing such other procedures as we considered necessary in the circumstances.
- Obtain an understanding of BIOS's internal control over compliance relevant to the audit in order to design audit procedures that are appropriate in the circumstances and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of BIOS's internal control over compliance. Accordingly, no such opinion is expressed.

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

Report on Internal Control over Compliance

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

Board of Trustees
Bermuda Institute of Ocean Sciences (BIOS), Inc.
Page 3

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

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

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

PKF O'Connor Davies, LLP

June 12, 2023

**Bermuda Institute of Ocean Sciences (BIOS), Inc.
(A Blended Component Unit of Arizona State University)**

Schedule of Findings and Questioned Costs
Year Ended December 31, 2022

Section I - Summary of Auditors' Results

Financial Statements

Type of report the auditors issued on whether the financial statements audited were prepared in accordance with U.S. GAAP:	Unmodified	
Internal control over financial reporting:		
Material weakness(es) identified?	___ yes	<u> X </u> no
Significant deficiency(ies) identified?	___ yes	<u> X </u> none reported
Noncompliance material to financial statements noted?	___ yes	<u> X </u> no

Federal Awards

Internal control over major federal programs:		
Material weakness(es) identified?	___ yes	<u> X </u> no
Significant deficiency(ies) identified?	___ yes	<u> X </u> none reported
Type of auditors' report issued on compliance for major federal programs:	Unmodified	
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	___ yes	<u> X </u> no

Identification of major program:

Bermuda Institute of Ocean Sciences (BIOS), Inc.'s major program is the research and development cluster. Accordingly, all grants and programs listed on the schedule of expenditures of federal awards are considered part of the research and development cluster. BIOS has no other federal programs.

Dollar threshold used to distinguish between Type A and Type B programs:	\$750,000
Auditee qualified as low-risk auditee?	<u> X </u> yes ___ no

Section II - Financial Statement Findings

During our audit, we noted no material findings for the year ended December 31, 2022.

Section III – Federal Award Findings and Questioned Costs

During our audit, we noted no material instances of non-compliance and none of the costs reported in the federal financially assisted programs are questioned or recommended to be disallowed.

Section IV – Prior Year Audit Findings

There were no prior year audit findings.