



THE UNITED KINGDOM ASSOCIATES OF THE BERMUDA INSTITUTE OF OCEAN SCIENCES

**Charity Registered with the Charities Commission
Reg No 290729**

**ANNUAL REPORT AND ACCOUNTS
FOR THE YEAR ENDED 31 DECEMBER 2023**

**Supporting Students from UK Universities
To Extend their Studies at**

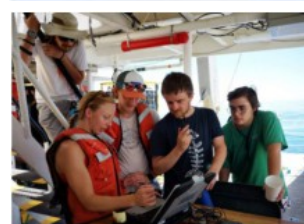


CHAIR'S STATEMENT

I am delighted to report that 2023 was another outstanding year for The UK Associates of the Bermuda Institute of Ocean Sciences. The generosity of our donors and sponsors in 2023, notably The Fishmongers' Company Fisheries Charitable Trust, Convex Insurance, Julian & Fiona Cusack and Maggie Mills and our Trustees Board, enabled us to support 10 early career scientists from UK universities to participate in specialist summer courses, and intensive research internships at The Bermuda Institute of Ocean Sciences, now affiliated with Arizona State University's Global Futures Lab.

ASU BIOS is committed to sharing fundamental knowledge of the oceans through state-of-the-art scientific research and education, and its internships and summer courses provide our sponsored students with unrivalled insights into the longest-running oceanographic and atmospheric observations concerning climate change biodiversity and pollution necessary to understand how to keep our planet healthy.

The advanced ocean science research technology available at ASU BIOS provides opportunities for students to investigate scientific questions across a host of fields, while simultaneously working with the rigour of traditional research methods which have underpinned the advancement of scientific understanding for decades. This combination of exposure to both long-established techniques and cutting-edge technology is incredibly valuable to students as they learn first-hand how to conduct quality scientific research. ASU BIOS also benefits from the high calibre of our sponsored students, several of whom have gone on to publish peer reviewed research papers.



2023 Scholarly Cohort

Thanks to the generous support provided by the UK Associates of BIOS sponsors and donors in 2023, it was possible for ASU BIOS scientists to work side-by-side 10 UK undergraduates and graduates as they extended their scientific education and expanded their scientific networks. Our students included two post graduate research interns supported by grants from Convex Insurance in 2022 and 2023, both joining ASU BIOS Research Specialist Rachel Parsons in her Microbial Lab, to work on projects examining marine virus and bacteria activity. In addition, our impactful support extended to eight students on three different novel summer courses studying coral reef and tropical marine ecology and research diving methods.



Coral Reef Ecology: Functional Ecology of Coral Reefs (CRE) Summer Course 17 July – 4 August 2023

Coral reefs and how they are acclimating to changes in their environment provide major indicators of climate change. In July three students supported by the UK Associates of BIOS joined 15 international students to study advanced research techniques. They learned about reef ecology, scientific measurement and interpretation of reef processes and environmental parameters. Students explored the environmental impacts on reef benthic communities and learned about the fundamental processes of reef metabolism. Through extensive laboratory and field work, participants gained hands-on experience with state-of-the-art instrumentation and techniques for collecting and analysing reef community and environmental data.



Partial funding was provided by the UK Associates of BIOS for three students from three UK universities to join a diverse international student group on the 2023 CRE course, which both advanced their knowledge of reef ecosystems and bolstered academic credentials.

- A recent geography graduate from The University of Birmingham,
- A marine science undergraduate from the University of the Highlands and Islands, and
- A master's student studying marine biology with oceanography from the University of Southampton.

Testimonials from our students continue to stress the importance of field experience, working closely with senior scientists, gaining confidence in their research and presentational skills and solidifying their career paths:

- *"I am now more committed to working in the marine science field and am hoping to build a long-term career as an oceanographer."*
- *"I really enjoyed the whole experience to learn about coral reef ecosystems, gain hands-on-experience of research techniques and to understand how these methods can help in current research."*
- *"I was able to put the theory I learned during lectures into practice. I feel more confident now in my data analysis and presentation skills. This course has exceeded my expectations."*

Research Diving Methods (RDM) Summer Course 26 June- 14 July 2023

The ability to SCUBA dive is a valuable tool for marine scientists as they seek to answer questions about the underwater environment. Given the usefulness and increasingly common employment of SCUBA as a research tool for marine science, students possessing underwater research training will enjoy a competitive advantage as they progress in their career. For three weeks starting at the end of June, ASU BIOS welcomed 16 students, including three supported by the UK Associates of BIOS, one with a full scholarship.



A series of introductory science lectures provided another cross-section of students from a range of research fields and geographical areas within the UK with an understanding of why, and how, researchers study marine communities using SCUBA. These lectures were integrated with field work which allowed students to practice hands-on data acquisition using a range of methods and equipment. The RDM course familiarised participants with the fundamentals of scientific diving, both theoretical and practical, and allowed students to learn first-hand about essential research techniques such as navigation, search and recovery procedures, and rescue diving.



- An undergraduate in ocean exploration and surveying from the University of Plymouth,
- A recent Master's Biology graduate from the University of Oxford, and
- An undergraduate student of marine science at the University of Exeter

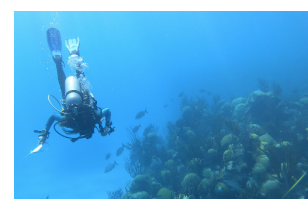
Notable comments from our RDM students:

- *"My long-term career plan is to become a sonic navigator working with remotely operated vehicles to study and survey the ocean, and therefore I would like to learn scientific dive research methods to achieve this goal."*
- *"I loved the feeling of diving with a purpose rather than recreationally, and enjoyed collecting data underwater that will be used by scientists at BIOS. My diving has progressed immensely, and I was able to gain valuable insight into career paths in marine biology as well as broaden my knowledge about coral reef ecology."*
- *"Without question, my personal confidence as a scientific diver has increased, both in and out of the water. My experience at BIOS has certainly confirmed my professional intention to work within the tropical marine environment...it has made me a better marine scientist."*

Tropical Marine Ecology (TME) Summer Course 26 June – 14 July

The Bermuda platform acts as a natural laboratory and offers scientists easy access to a number of marine habitats. This makes it an ideal location for students to learn about the ecology, physiology, and behaviour of a wide variety of marine organisms found in tropical habitats.

At the end of June two UK undergraduates through our scholarship programme joined the TME course along with 10 international students to participate in a three-week experiential course focused on ecology in tropical marine habitats.



- An undergraduate studying marine biology and zoology at Bangor University received a partial scholarship support, and
- An undergraduate studying marine biology at the University of Southampton was a recipient of a full UK Associates of BIOS scholarship.

The TME course delivered an introduction to the tropical marine environment and life in the open ocean, and focused on the diverse coral reef, seagrass and mangrove habitats, as well as

marine ponds and tropical rocky shores. Participants were offered the opportunity to examine the biology and ecology of the dominant inhabitants found in each habitat, as well as their interactions, trophic levels and energy transfer within and between the varying habitats.

Our students commented:

- *"The course was both challenging and enjoyable, making me even more passionate about marine life. I have made lots of connections and life-long friends which has opened up multiple opportunities for me in the future. I hope to stay in contact with many of the people I have met on the trip, and I would love to return to BIOS in the future. We learned multiple surveying techniques such as using quadrates and transect lines, which were challenging but very rewarding. I have gained more boat experience and feel more confident collecting data both in and out of the water."*
- *"It was a privilege to be embraced by the real-world scientific community at BIOS. The small and focused class size really enhanced the overall experience and my personal understanding of the content. The staff were excellent and made me feel respected, valued and safe. I feel I took away more applicable knowledge in these three weeks than previous university modules that lasted a whole semester. I believe the community, ecosystem and opportunities available at BIOS are entirely unique and I hope to be able to contribute to it myself someday soon."*



Research Internships 2023: February-April, September - December

Generous funding from Convex Insurance from 2022 and 2023 allowed us to support two research interns in 2023 with full scholarship awards, giving them the opportunity to work alongside ASU BIOS world-class scientists for three months and present their work.

ASU BIOS experiential internships support the active participation of students in wide-ranging research, providing interns with the opportunity to dive into a contemporary problem and see first-hand how research is conducted. Since marine science is a truly interdisciplinary and international field, interns often could interact with a wide range of scientists who visit our campus from all over the world.

For 12 weeks between February and April we supported with Convex funding, an Oxford University Earth Sciences master's graduate, to take part in a project investigating the processes of nitrogen loss at Devil's Hole in Bermuda. Our student noted:

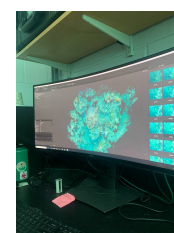
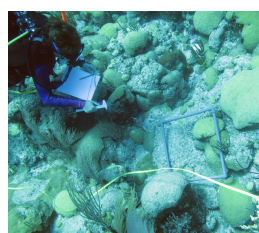
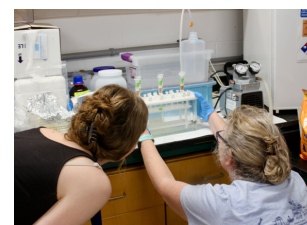
- *"I cannot believe how many different lab techniques I have learned over the past couple of months and am proud to be able to design and run experiments on my own. I have really enjoyed learning microbiology theory alongside the research methods and hope to be able to apply my new knowledge of marine microbiology to my future work/studies."*
- *"I chose BIOS because it gave the impression of being a close-knit, welcoming community of staff and scientists conducting high-end research and it did not disappoint. I would absolutely recommend a BIOS internship, it is amazing to me how much I've learned and developed in*

just 12 weeks, and I believe that, regardless of background and interest, any student could gain a lot from BIOS.

Based on these acquired abilities to investigate, design and run projects and experiments our student was offered and accepted a prestigious position in an international engineering consultancy focusing on sustainability and carbon distribution.

Our second intern, a master's student in medical microbiology at the London School of Hygiene and Tropical Medicine, spent 12 weeks between September and December undertaking a microbial research internship. Our student gained an extensive range of skills in marine orientated biology/microbiology and noted:

- *"I am hoping to diversify my skill set and ensure that my knowledge is comprehensive and encompasses new techniques and a greater understanding of marine microbes, working with new lab protocols and equipment to further my scientific career. It will provide me with lifelong connections and skills that will benefit me for future projects. This opportunity will be life-changing and will nurture my career in a direction that I could not have imagined."*



On behalf of our Board of Trustees I want to thank our donors for entrusting us with their funds to support our scholarship programme, especially Convex Insurance who joined us in 2022 and The Fishmongers' Company Fisheries Charitable Trust for their continued long-term support. I hope we have demonstrated to them and to our many previous corporate funders including AXA XL, AXIS Capital and WTW that our combined efforts make a tangible impact on the development of environmental champions, many of whom will play critical roles in our understanding of key climate issues in years to come.

My sincere thanks to all Trustees, Advisors and Honorary Officers for their support and hard work in our efforts in 2023 and a special thank you to Viscountess Diana Dunrossil who retired from our Board in 2023. We are indebted to Diana for her 33 years of service and delighted that she has agreed to continue to give us the benefit of her advice as Trustee Emeritus.

Diana has strong connections with Bermuda and was resident there from 1983 to 1988 when her late husband, John Morrison, 2nd Viscount Dunrossil was Governor. She joined our board in 1990 at the invitation of our founding trustee and leading environmentalist Max Bruce and her extensive experience in marine environmental matters and longstanding trusteeship with the UK Associates of BIOS provided us with an invaluable link to our alumni. We look forward to continuing to draw upon her extensive experience and wise counsel.



Christopher Day



31 January 2024

Chair of the Board of Trustees

UK Associates of the Bermuda Institute of Ocean Sciences



TRUSTEES' ANNUAL REPORT

The Trustees have pleasure in presenting their report together with the accounts and the independent examiner's report for the year ended 31 December 2023.

Reference and administrative information

Charity Name The United Kingdom Associates of the Bermuda Institute of Ocean Sciences ("UK Associates of BIOS")

Charity Number 290729

Address Fishmongers' Hall, London Bridge, London EC4R 9EL

Trustees Christopher Day - Chair
Lady Vereker – Vice Chair **
Christopher Cunliffe
Diana Viscountess Dunrossil (retired 26 June 2023)
Suzanne Ferlic Johnson
Professor Richard Lampitt
Nick Pewter

*** Lady Vereker also sits on the Advisory Board of the Bermuda Institute of Ocean Sciences (BIOS)*

Hon Secretary Lorraine Andrews

Hon Treasurer Ian Arnold

Structure, Governance and Management

Constitution

The Charity is an unincorporated association. It is governed by a Trust, which was established by deed on 27 November 1984 and last amended on 28 September 2015. The Association was granted charitable status by the Charity Commission on 11 January 1985.

Trustees

The Trustees, the majority of whom must be UK resident, normally meet once a quarter and they form the management committee. The Board of Trustees appoints new trustees and decisions can be made by a majority vote with a minimum of three trustees present. There is no requirement for Trustees to be reappointed on a rotational or any other basis. The Trustees are aware of the Charity Commission's public benefit guidance and take this into account when making decisions to which the guidance is relevant.

TRUSTEES' ANNUAL REPORT continued

Management

The Trustees are responsible for the strategic direction and governance of the Charity, whilst some day-to-day running is delegated to the Hon Secretary and Hon Treasurer. There are no staff and volunteers do all work. The Hon Secretary and Hon Treasurer attend the Trustee meetings to discuss progress and development. The Charity's Trustees consider that an audit is not required for this year under section 144 of the Charities Act 2011 (the "2011 Act") and that an independent examination is needed.

Advisors

The Trustees are further supported and assisted by the Advisors who provide insightful and multi-disciplinary guidance and expertise on all aspects of the Charity's operations and activities. During the year the following persons served in these roles:

Advisors: Professor Michael Depledge CBE

Professor Christopher Carbone

Christopher Leftwich

Trustee Emeritus: Diana Viscountess Dunrossil (from 26 June 2023)

These persons are invited to attend the Trustees Meetings but are not entitled to, and do not, vote at these meetings.

Objectives and Activities

Charitable purposes

The UK Associates of BIOS provides a valuable donation to the Bermuda Institute of Ocean Sciences ("BIOS") education programme for partial and full scholarships to UK university students to participate in courses and internships in Bermuda. BIOS, now partnered with Arizona State University's Julie Ann Wrigley Global Futures Lab ("ASU"), has an international reputation extending over one century for research and education in marine and atmospheric science. Full details can be found on <https://bios.asu.edu/education/uk-associates-of-bios/>

Activities

Bermuda is located in the middle of the North Atlantic Gyre and on the most northerly Atlantic coral reef system. This makes it an ideal location for studying the Open Ocean and sub-tropical near shore environments. BIOS is home to Hydrostation S, established in 1954, the longest running year-round data collection programme for any single location in the open ocean, and the Bermuda Atlantic Time-series Study (BATS). These studies are improving mankind's understanding of global ocean circulation, ocean chemistry and biology, and how the oceans and atmosphere interact and respond to a changing climate.

The Mid-Atlantic Glider Initiative and Collaboration (MAGIC) was launched at BIOS in 2014 to enhance and leverage BIOS's long-standing ocean measurement programmes southeast of Bermuda through the use of autonomous underwater vehicles. The overarching goal of MAGIC is to acquire new high-resolution measurements from underwater gliders to assess the contribution of small-scale processes that sustain the ocean's biological productivity, and

TRUSTEES' ANNUAL REPORT continued

to make those assessments over several years to build a statistically meaningful understanding of them.

BIOS expertise also lies in marine microbiology, risk prediction, coral reef ecology and resilience, and fish ecology. Recent highlights of research activities include the use of Baited Remote Underwater Video Stations (BRUVS) and eDNA coding to further our understanding of native reef fish and invasive Lionfish populations.

BIOS believes that ocean science for human good involves not only research with tangible benefits for communities and the environment, but also education programmes that highlight the many ways our lives are connected with the ocean. BIOS views education as a crucial part of global ocean science research, helping to translate the work of its faculty into meaningful experiences for students to better understand the importance of oceanography in the study of fish stock management, climate change and risk prediction, pollution and human health.

The mission of the UK Associates of BIOS is for the advancement of experiential education through scholarship and grant funding for both undergraduate and post-graduate UK university scientists, to enable them to study and carry out research at the Bermuda Institute of Ocean Sciences in an international student and faculty community. Without scholarships of this nature they would not have access to summer courses or longer internships, which provide hands-on educational opportunities to study Bermuda's unique marine ecosystems and geology, as they explore coastal and open ocean environments. Under the supervision of, and in collaboration with, BIOS scientists they gain field methods and unparalleled insight into the logistics required to plan and execute research activities. This experience affords a unique opportunity not readily available to UK students, and is often one that could support their career decisions as future scientists and educators.

The latest chapter in the history of BIOS has been the partnering in 2021 with the Julie Ann Wrigley Global Futures Lab at Arizona State University (ASU); and the recent launch of the ASU Global Futures Lab's 4th School of Ocean Futures of which BIOS is now its major component. The goal of the union is to marry programmes and scientific study within both organisations, strengthen them with experts in various fields who can learn from each other and share research ideas and results.

BIOS and ASU will now be able to look more holistically at the health of the ocean and atmosphere. UK Associates of BIOS will have a more valuable role to contribute to an international student body working on global collaborative research projects as the planet faces adapting to a warming planet.

Achievements and Performance

With the generosity of our donors, £34,875 (2022- £70,050) of funding was provided for BIOS internships and summer courses.

Many BIOS alumni have found the experience invaluable to support career decisions in marine science. Some return to BIOS at a more senior level to further their skills in collaborating, communicating and analysing scientific problems; making them strong candidates for future academic endeavours.

TRUSTEES' ANNUAL REPORT continued

Long-term success will be measured by leveraging shared knowledge gained by a better understanding of our oceans and the impact of climate change and how that relates to the health of our oceans, fisheries, marine environment, risk prediction and ultimately human health. This demands the survival of oceanographic research and educational institutes to equip new generations of scientists with life-skills and technology to achieve academically as future scientists at the cutting-edge of discovery.

Financial Review

The main source of funding continues to be from donations received.

Receipts from donations and associated gift-aid were £36,162 (2022 - £70,263). Payments were £35,027 (2022 - £70,381), of which £34,875 (2022 - £70,050) was spent towards our charitable causes. This represents 99.6% (2022 – 99.5%) of total payments, the balance in 2023 being incurred on bank charges and fundraising costs. The surplus for the year was £1,157 (2022 – deficit of £91).

The Trustees' policy is to maintain cash reserves above £1,000 in order to meet commitments and cover any unexpected expenditure. Cash at bank and in hand at the end of the year was £2,239 (2022 - £1,082), which is within the target range.

The Trustees are responsible for safeguarding the assets of the Charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

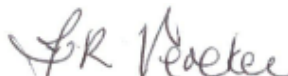
Plans for Future periods

The Trustees intend to continue and develop the education programme for the benefit of UK university students.

Approved by the Trustees on 31 January 2024 and signed on their behalf by:



.....
Christopher Day
Chair



.....
Lady Vereker
Vice Chair



.....
Lorraine Andrews
Hon Secretary

**INDEPENDENT EXAMINER'S REPORT TO THE TRUSTEES OF THE UNITED
KINGDOM ASSOCIATES OF THE BERMUDA INSTITUTE OF OCEAN SCIENCES FOR
THE YEAR ENDED 31 DECEMBER 2023**

I report to the Trustees on my examination of the accounts of the United Kingdom Associates of the Bermuda Institute of Ocean Sciences ('The Trust') for the year ended 31 December 2023, which are set out on pages 12 to 13.

Responsibilities and basis of report

As the Charity Trustees of The Trust you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ('the Act').

I report in respect of my examination of The Trust's accounts carried out under section 145 of the 2011 Act and in carrying out my examination I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

Independent Examiner's Statement

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe that in any material respect:

1. accounting records were not kept in respect of The Trust as required by section 130 of the Act; or
2. the accounts do not accord with those records.

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.

Richard Beckett FCA
6 Foundry House
Walton Well Road
Oxford
OX2 6AQ



31 January 2024

**STATEMENT OF RECEIPTS AND PAYMENTS
FOR THE YEAR ENDED 31 DECEMBER 2023**

	Notes	2023 £	£	2022 £	£
Receipts	1				
Voluntary receipts					
<i>Donations and Gift Aid</i>	3	36,162		70,263	
<i>Legacies</i>		-		-	
		<u>36,162</u>			70,263
Unrestricted bank interest		<u>22</u>			27
		36,184			70,290
Payments	1				
Charitable activities	3	(34,875)		(70,050)	
Fundraising costs		(67)		(200)	
Governance costs		-		-	
Bank charges		(85)		(131)	
		<u>(35,027)</u>			(70,381)
Net receipt/(payment)		<u>1,157</u>			<u>(91)</u>

**STATEMENT OF ASSETS & LIABILITIES AND BALANCES
AS AT 31 DECEMBER 2023**

	Unrestricted funds 2023 £	Unrestricted funds 2022 £
<u>Bank and cash balances</u>		
Bank deposit account	-	-
Bank current account	<u>2,239</u>	<u>1,082</u>
	<u>2,239</u>	<u>1,082</u>

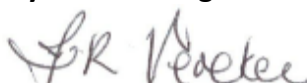
In addition £250 of gift aid is due from HMRC as at 31 December 2023 (December 2022 - £nil), relating to a December 2023 donation. There are no liabilities as at 31 December 2023 or 31 December 2022.

	£	£
<u>Funds reconciliation</u>		
Cash at bank and in hand – Dec 2022	1,082	1,173
Net receipt/(payment) for the year	1,157	(91)
Cash at bank and in hand – Dec 2023	<u>2,239</u>	<u>1,082</u>

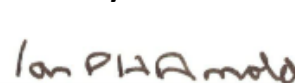
Approved by the Trustees on 31 January 2024 and signed on their behalf by:



.....
Christopher Day - Chair



.....
Lady Vereker – Vice Chair



.....
Ian Arnold – Hon Treasurer

NOTES TO THE ACCOUNTS

1. Basis of Accounting

These accounts have been prepared on the Receipts & Payments basis in accordance with Section 133 of the Charities Act 2011.

2. Nature and purpose of funds

Unrestricted funds are those that may be used at the discretion of the Trustees in furtherance of the objects of the Charity. The Trustees maintain a single unrestricted fund for the day-to-day running of the Charity.

Restricted funds are those funds that the Trustees are obliged to spend only on particular purposes set out by the donor or in an appeal document and these particular purposes are narrower than the Charity's objectives.

Endowment funds are funds that the Charity is prohibited by the governing document from spending as income. Normally these will be investments but may also be property held as endowment for use by the Charity. The investment receipts must be spent for the purposes indicated by the governing document.

Designated funds are part of unrestricted funds, which the Trustees have set aside or earmarked to be used for a particular purpose. They are not legally distinct funds and Trustees can at any time re-designate them for other purposes.

There were no restricted, endowment or designated funds at the beginning or the end of the year.

3. Donations and Charitable activities

	2023	2022
	£	£
Donations and gift aid		
Unrestricted funds - General	2,562	1,563
- Designated	14,500	14,500
- Total	17,062	16,063
Restricted funds	19,100	54,200
	36,162	70,263
Charitable activity	£	£
Unrestricted funds - General	1,275	1,350
- Designated	14,500	14,500
- Total	15,775	15,850
Restricted funds	19,100	54,200
	34,875	70,050