

# 2017 Annual Report



Bermuda Institute of Ocean Sciences

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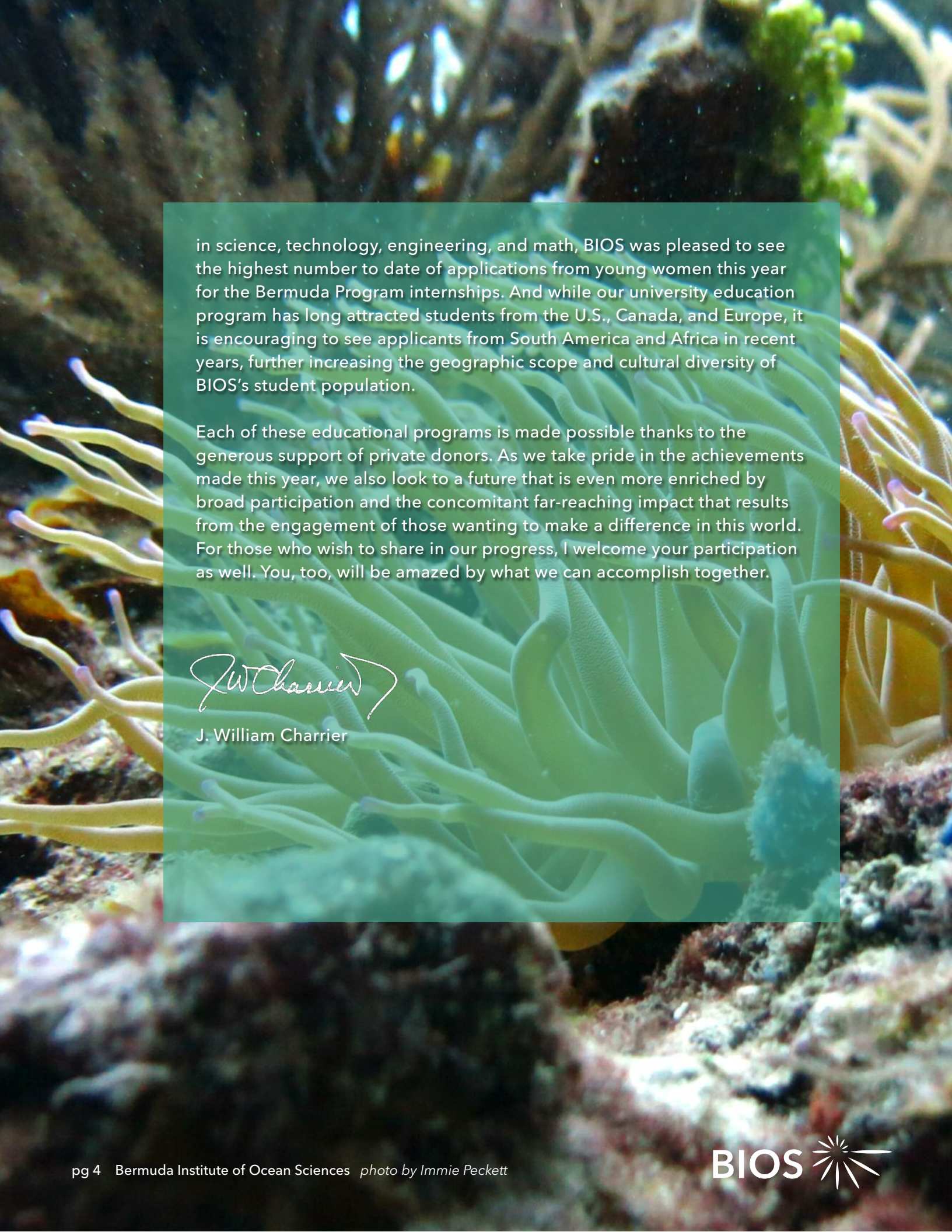
Bermuda Institute of Ocean Sciences

# Letter from the Chair

Those of us who come from the corporate sector and now serve on the boards of non-profit organizations are often amazed by what non-profits can accomplish. In recent years, I've witnessed BIOS recruit and cultivate scientific talent, strengthen its international partnerships, and significantly enhance several of its most highly regarded programs. This past year the positive trend continued, as BIOS enhanced its mission by acquiring several new technological assets for research and fostering diversity within its education program.

Ranging from devices that can capture the ocean's smallest life forms from large volumes of seawater, to large laboratory tanks that house controlled experiments on corals, this year's acquisitions illustrate how BIOS's research facilities are ever-improving. The benefits are quickly realized as these new technologies are put to immediate use and integrated into the research enterprise; and their impact is wide-ranging and long-lived, as they are utilized not only by resident BIOS scientists but also by visiting researchers and students from the world over. In order for BIOS to maintain its world-class reputation, it is critical that we make investments such as these. I want to thank our scientists and staff who worked hard to secure the financial resources required from both federal funding agencies and private philanthropists to bring these assets to BIOS, and I look forward to our engagement with additional funders who can help us further strengthen and enhance BIOS's facilities.

In 2017, BIOS also continued to make critical investments in human capital by successfully broadening the reach of its education programs. Highlighted in this year's report are examples of the increasing diversity of BIOS's student population. Achieving diversity and equity in science education is a goal for Bermuda, for the U.S., and indeed for many countries, and BIOS endeavors to do its part as a member of the global scientific community. This year we are also pleased to showcase BIOS's wide reach on the island of Bermuda, where participation in Ocean Academy is enjoyed by students from all socioeconomic backgrounds and grade levels. As society continues to struggle with closing the gender gap



in science, technology, engineering, and math, BIOS was pleased to see the highest number to date of applications from young women this year for the Bermuda Program internships. And while our university education program has long attracted students from the U.S., Canada, and Europe, it is encouraging to see applicants from South America and Africa in recent years, further increasing the geographic scope and cultural diversity of BIOS's student population.

Each of these educational programs is made possible thanks to the generous support of private donors. As we take pride in the achievements made this year, we also look to a future that is even more enriched by broad participation and the concomitant far-reaching impact that results from the engagement of those wanting to make a difference in this world. For those who wish to share in our progress, I welcome your participation as well. You, too, will be amazed by what we can accomplish together.



J. William Charrier

# Letter from the President & CEO

The pursuit of scientific research is not unlike many other professions; in order to make progress one needs to put good tools into skilled hands. In 2017, BIOS acquired several new tools that further enhance the institution's research capabilities, helping the organization and its scientists to keep pace with the cutting-edge advancements that are taking place worldwide.

As described in this year's report, these new tools include advanced instrumentation for use both onshore and at sea, enabling researchers to more precisely and more comprehensively measure and assess the natural environment through various phases of the research process. As scientists carry out explorations in the field, their goal is to make more detailed and fine-scale measurements over larger and larger areas of the ocean. Included in the acquisitions of 2017 are instrument systems that meet these requirements, providing high-resolution data on the biological, chemical, and physical properties of the ocean, as well as one system that will provide details on the ocean's interaction with the atmosphere. Launching a field campaign requires a significant amount of planning, funding, and other sea-going assets, so securing the best possible field data when the opportunity arises is crucial. The recently acquired technologies make the most of these opportunities, enabling BIOS scientists and others from the around the world to fully capitalize on BIOS's expeditionary capabilities.

With an ever-increasing appetite for data comes the need to process and analyze it all. As scientists bring the results of their fieldwork back to their laboratories, the instruments acquired this year are enabling them to sort and assess samples more efficiently and effectively. Having state-of-the-art laboratory equipment is vital to the research process, since the analysis of precious field samples can easily span months, years, and even decades, as new lines of inquiry develop and investigations dive more deeply into the unknown. Complementing fieldwork are controlled laboratory simulations and experiments which also get a boost from this year's technological acquisitions.

As we aim to put these new tools into the skilled hands of our researchers, we also aim to put them into the hands of the students we are training and educating to meet the challenges of tomorrow. The students who come to BIOS greatly benefit from a diverse set of research projects and the available tools and techniques associated with them. Having new tools such as those acquired in 2017 also helps BIOS to attract a diverse array of students. In this report, we highlight some of the amazing students that participated in our programs this year, representing a broadening array of backgrounds and experiences. This is good news for BIOS, and good news for our field, since we believe that the advancement of science benefits most when a wide range of talent is engaged in the scientific enterprise. Science addresses some of society's most urgent and impactful issues, so the people that are defining, prioritizing, and solving scientific issues should represent the diversity present in society. At BIOS, we're doing our best to play a positive role in this overarching objective.

As we look to the future, we will continue to strengthen BIOS's technological and human resources with the confidence that our mission and productivity are worthy of these ongoing investments.



William B. Curry



R/V Atlantic Explorer

# New Technologies



# Advancing the Frontiers of Science with Newly Acquired Technologies



*Aerial view of new glider technology being tested offshore of Bermuda.*

At the heart of oceanographic research is technology, which allows scientists to stay at sea longer, explore deeper depths, and fill in knowledge gaps about the ocean environment and its inhabitants.

From new sensors and instruments to novel methods of collecting and analyzing vast troves of data, technology is advancing the frontiers of ocean science research and bringing to light new information about the ocean's tiniest life forms, as well as global trends in climate and ocean biogeochemistry that span seasons and decades.

Over the last year, BIOS has benefitted from an array of new technologies that are allowing faculty and staff the opportunity to pursue cutting-edge research in their respective disciplines. Acquired through a variety of mechanisms, including both federally-funded projects, private awards, and internally-funded challenge grants, these technologies help position BIOS to remain at the forefront of critical, socially-relevant ocean and atmospheric science.

At the beginning of the year, the Mid-Atlantic Glider Initiative and Collaboration (MAGIC) lab took delivery of a pair of photosynthetically active radiation (PAR) sensors, which measure light intensity, as well as a microrider, which measures microscale turbulence in the water. These sensors will provide much-needed, high-





ZooSCAN instrument analyzes zooplankton caught in one of the MOCNESS nets. The computer shows enlarged, high resolution zooplankton images, including a deep sea caridean shrimp, a jellyfish from the family Periphyllidae, and a predatory Arietellus copepod. Photo by Tiffany Wardman

resolution measurements of key factors that determine annual net community productivity and local carbon exports locally. Also known as the biological carbon pump, these are the processes by which phytoplankton transform inorganic atmospheric carbon dioxide into organic carbon, produce oxygen for respiration, fuel the marine food web, and provide the flux of organic matter that is exported from the surface layers to the deep ocean.

In February, the NASA-funded Coral Reef Airborne Laboratory (CORAL) project unveiled two flumes—large, rectangular fiberglass structures outfitted with flowing seawater—that will help CORAL scientists make measurements of reef health. Equipped with two spectrometers that measure light in the aquatic environment, the flumes allow researchers to measure photosynthesis and calcification of reef communities that include many different combinations of hard coral, soft coral, algae and sand.

Using these measurements, CORAL scientists will develop a set of algorithms allowing them to estimate reef metabolism from remote sensing images. The successful development of these algorithms would mark a significant change in how scientists study reef ecosystems, providing them with more insight into complex questions, such as how a changing climate affects reef function.

In March, the BIOS Microscopy and Image Analysis Facility welcomed a new microscope to its collection. The state-of-the-art inverted microscope, which features lenses below the stage instead of the traditional above-stage placement, has the ability to enhance contrast in unstained and transparent samples, making it especially useful for studying larger organisms like zooplankton and coral larvae. Already the microscope is being planned for use in a study of lionfish reproduction rates among different marine habitats in Bermuda, which will help



*Researchers recovered the Institute's new Multiple Opening/Closing Net and Environmental Sensing System, or MOCNESS. The system has nine nets, each 30 feet (9 meters) in length. Each net, typically composed of a very fine, filtering mesh material, can be opened and closed, one by one, as they are towed through the water across different depths. Photo by Nick Mathews*

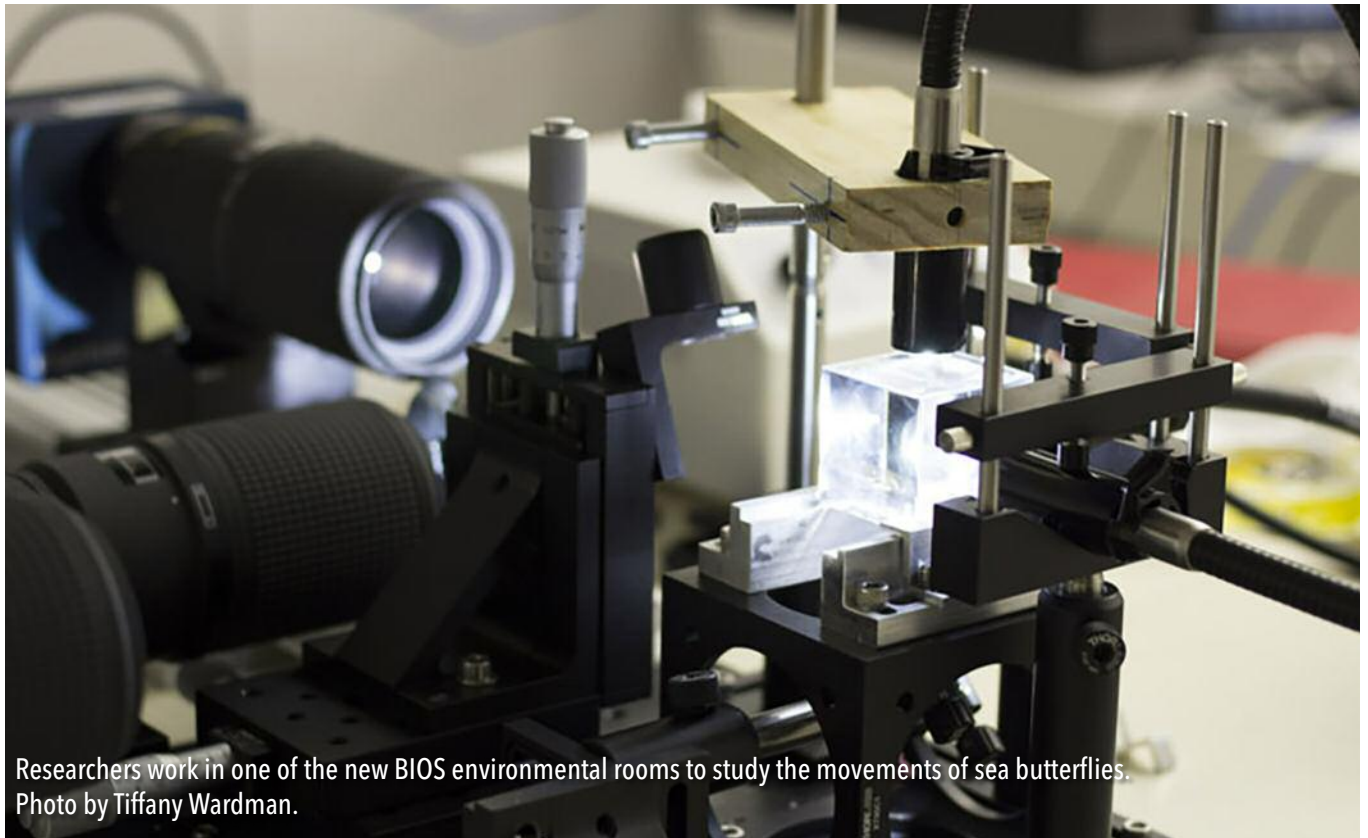
shed light on potential control and management strategies for the invasive fish population.

In April, BIOS acquired three new instruments to enrich investigations into the roles and interactions between microbial communities and migrating zooplankton in the Sargasso Sea. The instruments, which include a high-volume water pump, a unique net system, and a specialized animal scanner, will be used as part of a large, ongoing project called BIOS-SCOPE, for Bermuda Institute of Ocean Sciences Simons Collaboration on Ocean Processes and Ecology. BIOS-SCOPE's team includes oceanographers, marine chemists, molecular biologists, and microbiologists from six research institutions who are working together to discover how plankton consume and produce organic matter throughout the year.

The high-volume pump increases the opportunities for BIOS-SCOPE microbiologists to sample large volumes of water from different ocean depths, concentrating the microbes and particles from hundreds to thousands of liters of

water onto a large filter. This sampling method is at the core of tracking how microbial communities boom and bust at the ocean's surface, and at depth, impacting nutrient cycles in their wake. The second instrument, a new Multiple Opening/Closing Net Environmental Sensing System, known as MOCNESS, expands the teams' ability to sample zooplankton at discrete depths. The MOCNESS comprises nine separate nets that can be opened and closed one by one, and sensors mounted on the instrument's frame record the environmental characteristics and volume of water filtered through each net, providing vital context about the habitat of captured zooplankton.

The third instrument, an automated imaging tool known as the ZooSCAN, speeds up the identification of zooplankton within net tow samples. Rather than an expert spending hundreds of hours at the microscope sorting, identifying, and counting the plankton, preserved samples are simply poured into a waterproof, flatbed scanner. Within the high-resolution image generated from a sample, the



Researchers work in one of the new BIOS environmental rooms to study the movements of sea butterflies.  
Photo by Tiffany Wardman.

ZooSCAN software recognizes individual animals, tallies the abundance of individuals within groups of interest, and calculates vital metrics on size and volume of individual animals. An online web repository hosts ZooSCAN images, making them available to research communities worldwide.

In July, the research vessel Atlantic Explorer sailed from BIOS sporting a new instrument package on its mast and bow designed to measure climate-relevant and constantly shifting gases, moisture, and heat between the ocean and atmosphere. The instrument package, called an eddy covariance system, will be used routinely during regular cruises to the Bermuda Atlantic Time-series Study (BATS) site and other regions of the Sargasso Sea, adding to information collected over years and decades on fundamental ocean processes and functions. Measuring gases exchanged between the ocean and atmosphere helps scientists understand Earth's natural processes and is critical for predicting potential future climate changes.

The new instruments were purchased and installed with support from the Institute's recently established Cawthorn Innovation Fund. The fund, created by and named for Rob Cawthorn, a BIOS Trustee Emeritus, is administered through an internal application system among BIOS scientists who propose unique research ideas that may not receive funding from outside sources. In this manner, the Cawthorn Innovation Fund provides resources for BIOS scientists to expand their research and pursue new avenues of scientific inquiry, investigation, and collaboration.

As we look ahead to 2018, we are eager to continue making investments in a variety of technologies that will keep BIOS at the forefront of ocean and atmospheric science research. These new technologies also bring with them the opportunity to train the next generation of scientists in cutting-edge investigative techniques and analysis methods, further strengthening BIOS's suite of education programs for students in Bermuda and abroad.

An underwater photograph of a coral reef. Several striped surgeonfish are swimming in the clear blue water. The reef is composed of various types of coral, including branching and fan-like structures. The lighting is bright, creating a vibrant blue environment.

# Advancing Diversity in Science through Education



Coral reef ecology students identify species in the laboratory. Photo by Tiffany Wardman.

Throughout the world, the breadth of fields under scientific scrutiny are as diverse as the researchers themselves.

Research sees individuals of countless nationalities, races, and socioeconomic backgrounds come together with a key goal in common; the advancement of scientific understanding. At the core of BIOS's education programs is the drive to celebrate diversity and to assist in training a broad cross-section of the global student community.

For decades the variety of experts at BIOS has illustrated to students that they don't need to match a stereotypical image to be successful, and that a multitude of career paths are accessible and achievable through dedication and commitment. BIOS's education programs train both local and international students to analytically investigate the natural world and to employ scientific methods to advance their own understanding, and that of the wider scientific community.

## University Programs

In 2017, college students from around the world gathered in Bermuda to gain first-hand experience conducting scientific research. BIOS's educational experiences for university students included hands-on internships working collaboratively with BIOS scientists, semester-long programs engaging students in a combination of coursework and research, and summer courses in topics aligned with the expertise of BIOS faculty. Students travelled to Bermuda from Austria, Brazil, Canada, China, Cuba, England, Italy, Mexico, the U.S.A., and Venezuela, to name just a few countries. The increasing geographic scope of BIOS's student pool indicates a broadening of our international appeal and is reflective of the diversity of individuals in science.

While the students each brought a unique set of interests and academic experiences, they all left with an appreciation for the role that hands-on research plays in ocean science, as well as the



Graduate intern, Vlad Macovei, a Romanian national is a member of the prestigious Southampton Partnership for Innovative Training of Future Investigators Researching the Environment program.

challenges that come with it. Actively participating in research, and living at a world-class marine research institution, provided students with the tools necessary to understand the complex workings of nature and the role of scientific research in society.

A Ph.D. student at the University of Southampton (England), Vlad Macovei is a member of the university's prestigious SPITFIRE (Southampton Partnership for Innovative Training of Future Investigators Researching the Environment) program. It was with support from this program that Macovei, a Romanian national, undertook an internship at BIOS this summer where he learned to operate a state-of-the-art carbon sensor. "The internship has everything I could hope for, Macovei said. "I am getting sea-going experience on the *R/V Atlantic Explorer*, learning new techniques for lab sampling, and being provided with a first-hand look at new instrumentation. I have been given the time and

guidance to master new techniques which will be beneficial to my thesis research."

Originally from Norway, Simen Johnsen is undertaking a Ph.D. at the University of Toronto

**"For a number of years I have been very much aware of the science at BIOS, and the leading researchers here, and this internship has allowed me to be part of this prestigious and global institute."  
Vlad Macovei, 2017 BIOS Graduate Intern,  
University of Southampton.**

(Canada). This summer, Johnsen took part in the 3-week Modern Observational Oceanography course at BIOS which introduced students to, and offered them practical experience in, the field of observational oceanography. "In the future I plan to do research, though I've been unsure in what



Amber Reid works on a bacterial analysis in the Microbial Ecology Laboratory as part of her project for the Bermuda Program. Photo by Tiffany Wardman.

direction I want to take this research,” Johnsen said. “BIOS increased my appreciation for ocean and climate science and has helped solidify my future plans.”

## Ocean Academy

Ocean Academy utilizes BIOS’s cutting-edge research facilities as a powerful tool to engage Bermuda’s students and educators in the fields of science, technology, engineering, and math (STEM fields) and leverages science-focused investigations to inspire environmental awareness. Celebrating diversity is central to Ocean Academy and BIOS believes that every student should have equal access to educational opportunities regardless of race, gender, and economic circumstances. This year Ocean Academy worked hard to achieve our goal of economic and racial inclusivity and for our hands-on education programs to transcend the social divides within Bermuda’s community.

Underpinning each program within Ocean Acad-

emy is the drive to train today’s youth to become Bermuda’s leaders of tomorrow. Worldwide, gender disparity within STEM degree programs and the college-educated workforce is an issue that has faced universities, funding agencies, and employers for decades. In 2017, the Bermuda Program (the capstone of Ocean Academy), sought to provide local women with opportunities beyond the classroom to gain proficiency in STEM fields. Experiential learning has the ability to boost the globally-relevant skills of local students, and to enhance the future career prospects of students across Bermuda’s island nation. Ocean Academy challenges Bermuda’s youth to become innovative and critical thinkers by engaging them to design solutions to real world problems.

Bermudian student Phoebe Barboza has been taking part in BIOS’s education programs since 2012 when she first enrolled in the Marine Science Internship program. Since then she has worked her way through the ranks of Ocean



Summer students participate in SCUBA as part of an internship to deliver resumé-building skills and training in the foundations of scientific research and science diving. Photo by Kyla Smith.

Academy and, in 2017, she returned as a Bermuda Program intern to conduct research for her master's dissertation at the University of Southampton. Her research aimed to provide a comprehensive assessment of reef condition and recovery 70 years after the construction of the airport in Bermuda, which was a major disturbance to the reef environment. "The Bermuda Program played a crucial role in helping me work toward my goal of a career in marine conservation and planning consultancy by challenging me, teaching me new techniques, and giving me an opportunity to further my leadership skills," Barboza said.

Amber Reid, a student at Northeastern University (Massachusetts) also spent this summer as a Bermuda Program intern. Reid is interested in sustainable development and planning, and hoped that by investigating the changes in seasonal abundance of two bacteria within Devil's Hole, Bermuda, she would grasp some of the science behind natural island habitats. "As a first-

generation university student, and a woman in STEM with Caribbean roots, I am passionate about the protection of island environments, as well as the people who live in environmentally vulnerable island nations," Reid said. "But to be able to preach about planning you have to understand the science behind it."

While at BIOS, students this year were introduced to the techniques, skills, and intellectual processes required to conduct scientific research. In the past, interns and students have gone on to co-author papers in peer-reviewed scientific publications about their research, given presentations at national and international scientific conferences, and even returned to BIOS to accept jobs as teaching assistants or research technicians. Through the study of oceanographic and atmospheric sciences, educational experiences at BIOS have directly translated into a strong foundation for academic progress for a diverse cohort of learners.



# Selected Financial Highlights Overview

It is with great pleasure that we present the 2017 fiscal year financial statements for the Bermuda Institute of Ocean Sciences. In 2017, all areas of support improved over prior years as reflected in the Institute's change in net assets from operating activities. The Institute outperformed its budget with year-end results stronger than anticipated. We attribute the 2017 successes to Management's commitment to operational efficiency and continued investment in BIOS's strategic plan, the dedication and support of our Board of Trustees, and the philanthropic investments of individuals, foundations, and corporations.

## SELECTED HIGHLIGHTS:

- In 2017 BIOS's net assets were \$35M, a growth of \$4.9M from 2016. Net assets represent the accumulated strength of an organization and is an important gauge of BIOS's ability to carry out its mission.
- Fixed assets and cash increased by \$4.7M, attributable to new gifts and necessary debt refinancing, affording investments into our physical infrastructure with ongoing improvements continuing into 2018. Upgrades to our facilities' air conditioning and lighting units were completed in 2017. This investment will reap dividends in future periods via reductions in energy consumption and lower operating costs.
- BIOS's investment portfolio rose by \$2.9M, valued at \$17.4M at year end. Endowed investment returns continue to improve after severe market declines and portfolio losses experienced in 2015. Endowment returns grew by 15.2% in 2017, eleven points above prior year returns. A stronger performing endowment provides for healthier returns for future periods of distribution in support of the Institute. \$712K of endowment support was released in 2017.
- \$1.2M of Gift in Kind (GIK) services and property are included in support and correlating expenditures were \$928K. Operating expenditures increased by nearly 4% after discounting the GIK effect. A key influence in the rise of operating expenditures relates to new depreciation charges in 2017. 91% of operating expenses were in direct support of BIOS's research and education programs, consistent with the prior year.

In the year ahead, we look forward to strengthening existing partnerships and developing new collaborations that will advance scientific research and expand educational opportunities for both grade school and university students. As we continue to pursue both federal and private funding to support our efforts, we will remain committed to fiscal discipline and the strategic allocation of resources to further strengthen our reputation as a leader in ocean science research and education.



Victoria Millett CPA, BCOMM  
Treasurer and Controller

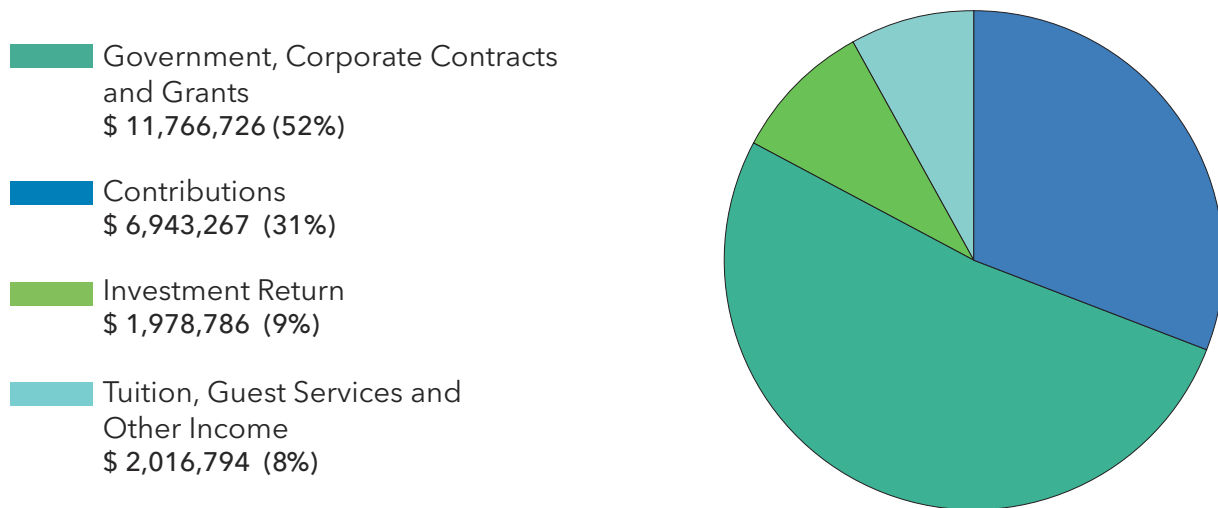
*Please visit [www.bios.edu/about/annual-reports/](http://www.bios.edu/about/annual-reports/) for a full financial report.*

# Summary Financial Highlights

December 31, 2017

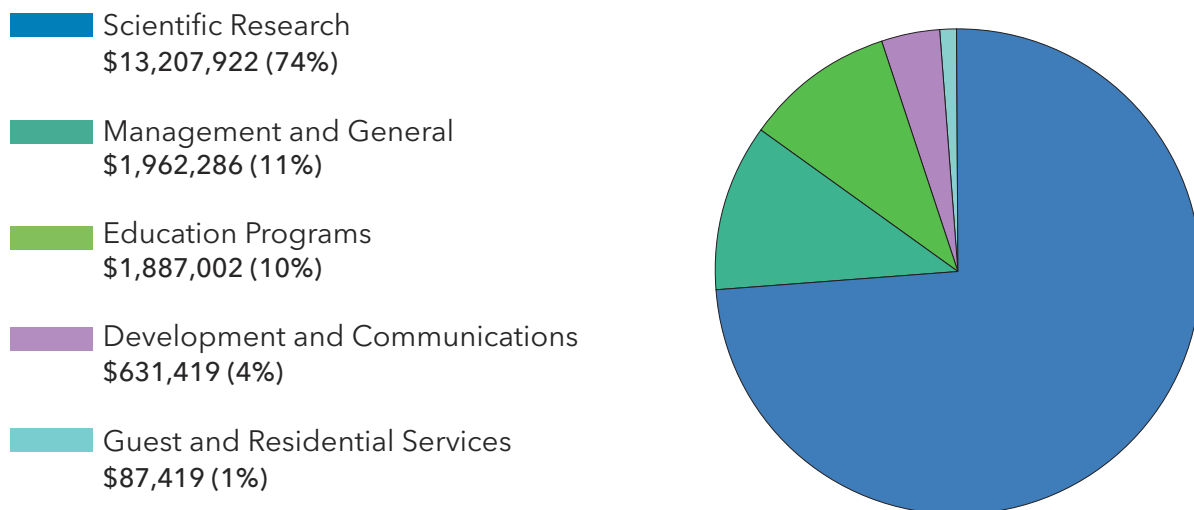
## 2017 REVENUES & SUPPORT

Revenue and support is derived from grants and contracts received through the U.S. and Bermuda governments (52%) and gifts; individual, corporate and foundation donors (31%). Additional sources of support are investment return pertaining to endowment funds (9%) and tuition and fees for the use of BIOS's various scientific, marine and housing facilities and attendance at our many educational programs (8%).



## 2017 EXPENSES

Program expenses include scientific research (74%); education activities (10%); and guest and residential services (1%). Other expenses include management and general (11%); and development, marketing and communications (4%).



# Summary Financial Highlights

December 31, 2017

Statements of Financial Position

	2017	2016
<b>Assets</b>		
Cash and cash equivalents	\$ 2,857,760	\$ 855,045
Grant receivables and other assets	890,608	780,567
Contributions receivable, net	3,176,915	4,454,992
Investments	17,406,118	14,504,921
Property and equipment, net	18,754,675	16,034,500
<b>Total Assets</b>	<b>\$ 43,086,076</b>	<b>\$ 36,630,025</b>
<b>Liabilities and Net Assets</b>		
<b>Liabilities</b>		
Payables, accruals, advances and deposits	\$ 1,667,751	\$ 1,552,033
Loans payable	6,869,177	5,458,368
<b>Total Liabilities</b>	<b>8,536,928</b>	<b>7,010,401</b>
<b>Net Assets</b>		
Unrestricted	\$ 11,421,176	\$ 9,746,051
Temporarily restricted	3,071,672	10,093,625
Permanently restricted	10,056,300	9,779,948
<b>Total Net Assets</b>	<b>34,549,148</b>	<b>29,619,624</b>
<b>Total Liabilities and Net Assets</b>	<b>\$ 43,086,076</b>	<b>\$ 36,630,025</b>

Statements of Activities

<b>Support and other Revenues</b>		
Contributions	\$ 6,943,266	\$ 2,739,138
Grants and Contracts	11,766,726	8,554,388
Tuition, guest services and other income	1,978,786	1,686,694
Investment return	2,016,794	514,170
<b>Total Revenue and Other Support</b>	<b>22,705,572</b>	<b>13,494,390</b>
<b>Expenses</b>		
<b>Program services</b>		
Scientific research	\$ 13,207,922	\$ 12,792,629
Education courses and programs	1,887,002	1,843,847
Guest and residential services	87,419	225,332
<b>Total Program Services</b>	<b>15,182,343</b>	<b>14,861,808</b>
<b>Support Services</b>		
Development, marketing and communications	\$ 631,419	\$ 653,720
Management and general	1,962,286	641,645
<b>Total Support Services</b>	<b>2,593,705</b>	<b>1,295,365</b>
<b>Total Expenses</b>	<b>17,776,048</b>	<b>16,157,173</b>
<b>Increase (Decrease) in Net Assets</b>	<b>\$ 4,929,524</b>	<b>\$ (2,662,783)</b>

# Summary Financial Highlights

December 31, 2017

	2017	2016
<b>Investments</b>		
Commonfund Global Multi Asset Portfolio LLC	\$ 15,069,999	\$ 13,753,216
Vanguard Federal Money Market Fund	2,336,119	751,705
<b>Total</b>	<b>\$ 17,406,118</b>	<b>\$ 14,504,921</b>

<b>Endowments</b>		
Balance on January 1	\$ 13,732,391	\$ 13,910,139
Contributions	276,352	25,350
Investment return		
Net appreciation (depreciation)	\$ 1,812,983	\$ 329,819
Income (interest & dividends)	190,224	182,436
Distributed during the year	(711,774)	(715,353)
<b>Balance on December 31</b>	<b>\$ 15,300,176</b>	<b>\$ 13,732,391</b>
Represented on the Balance Sheet as:		
Unrestricted	\$ 1,541,784	\$ 1,306,173
Temporarily restricted	3,702,093	2,646,271
Permanently restricted	10,056,299	9,779,947
<b>Balance on December 31</b>	<b>\$ 15,300,176</b>	<b>\$ 13,732,391</b>

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Summer students participate in a swim test for their science diver certification. Photo by Danielle Becker.

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Risk Prediction Initiative

Matt Hayden  
Research Technician

Ali Hochberg  
Research Technician

Eric J. Hochberg, PhD  
Associate Scientist

Rodney J. Johnson, PhD  
Assistant Scientist

Joseph Jones  
Research Technician

Paloma Lopez  
Research Technician

Amy Maas  
Assistant Scientist

Julia Matheson  
Research Technician

Natasha McDonald  
Research Specialist

Quinn Montgomery  
Research Technician

Keven Neely  
Research Technician

Tim Noyes  
Research Specialist

Fernando Pacheco  
Research Technician

Rachel J. Parsons  
Microbial Observatory Lab  
Manager

Stacy Peltier  
Research Technician

Andrew J. Peters, PhD  
Associate Scientist

Sam Stevens  
Research Technician

John Wardman, PhD  
Science Program Coordinator,  
RPI

## Adjunct Faculty

Andreas J. Andersson, PhD  
Scripps Institution of  
Oceanography

Craig Carlson, PhD  
University of California, Santa  
Barbara

Ruth Curry  
Senior Research Specialist,  
Woods Hole Oceanographic  
Institution

Steven Giovannoni, PhD  
Oregon State University

Michael W. Lomas, PhD  
Bigelow Laboratory for Ocean  
Sciences

Norman B. Nelson, PhD  
University of California, Santa  
Barbara

Philippe Rouja, PhD  
Custodian of Historic Wrecks,  
Bermuda Government

Samia Sarkis, PhD  
Senior Marine Researcher,  
Department of Conservation  
Services

Struan R. Smith, PhD  
Bermuda Natural History  
Museum





Maureen Conte (middle) and fellow scientists and crew members recover the mooring at the OFP site offshore Bermuda. The subsurface mooring is anchored in 2.7 miles (4,500 meters) of water and extends to 984 feet (300 meters) below the surface.

Deborah Steinberg, PhD  
Virginia Institute of Marine  
Science

Wolfgang Sterrer, PhD  
Research Associate,  
Bermuda Zoological  
Society

Simon J. Ussher, PhD  
Plymouth University  
Scientific Technical Staff

## Education

Kaitlin M. Baird  
Science in Education  
Coordinator

Penelope A.G. Barnes  
Education Director,  
University Programs

Chloe Baron  
Administrative Assistant,  
University Programs

Heidi Smith  
University Programs/Library  
Assistant

Kyla Smith  
Program Assistant

## Instructors

Penelope A.G. Barnes  
Nicholas R. Bates, PhD  
Maureen H. Conte, PhD  
Ruth Curry  
Samantha de Putron, PhD  
Gretchen Goodbody-  
Gringley, PhD  
Eric J. Hochberg, PhD  
Andrew J. Peters, PhD

## Marine Operations

Quentin M. Lewis Jr.  
Marine Superintendent

Susan T. Brittner  
Marine Operations  
Coordinator

Deborah Moran (Nov. 2017)  
Marine Operations  
Coordinator

Rick J. Verlini  
Port Captain

Justin Smith  
Oceanographic Technical  
Services Manager

Nick Mathews (Jul - Sept)  
Acting Oceanographic  
Technical Services Manager



Nick Mathews (Oct - present)  
Oceanographic Technical  
Services Manager

Mason Schettig  
Marine Technician

Rory O'Connell  
Jillon McGreal  
Relief Marine Technicians

### *R/V Atlantic Explorer*

George W. Gunther  
Captain

Richard E. Smith Jr.  
Chief Engineer

Donald Heffern  
Angelica Mendez  
Larry Morris

Robert Shakespeare  
Chris Sheridan  
Relief Mates

Bob Cruise (Relief)  
Joseph E. Howard (Relief)  
Chief Engineer

Shawn Brown  
John Crofts  
Relief Able Seaman

Michelle Fetterly  
Alex Forsythe  
Bruce Kolp  
Verna McKinney  
Elizabeth Ricci  
Beatrice Wicker  
Sarah Wicker  
Relief Cooks

### *R/V Atlantic Explorer Crew* *Bernhard Schulte Ship*

Mel June Inocencio  
1st Officer

Berlin Jamelo  
Rodney Jumeras  
Alchamor Soliva  
Motormen

Bernardo Manalo  
Lec Tindugan  
Carlos Calayo  
Chefs

Joseph Paitone  
Ronaldo De Leon  
Bosun

Jesus Ambrocio  
Ciriaco Mutas Jr.  
Seamen

# Faculty & Staff

## Operations

Jane Burrows  
Accommodations Reservations  
& House Manager

LeeAnn Tuzo  
Accounts Payable Clerk

Ruth M. Heron-Watts  
Accountant

Gillian Hollis  
Assistant to the President and  
CEO, and Secretary to the  
Corporation

Alexander Hunter  
Dive Safety Officer/Small Boats  
Supervisor

Mark Jolley  
Information Technology  
Manager

Charles King  
Communications  
Technician

Kelly McLaren  
Qualified Accountant

Miranda Medeiros  
Human Resources Officer

Charlene Millett  
Kitchen Assistant

Victoria Millett  
CPA Treasurer and Controller

Sharon Minors  
Office/Room Attendant

Donika O'Mara  
Office/Room Attendant

Simon Parkinson  
Network and Systems  
Administrator

Carol Pitcher  
Office/Room Attendant

Vanessa Shorto  
Guest and Visitor Services  
Coordinator

Helena Simoes  
Chef

Chantel Simons Smith (hired  
Oct 9, 2017)  
Accountant

Antar Smith  
Network and Systems  
Administrator

Heidi Smith  
University Programs/Library  
Assistant

Jeremy Smith  
Painter/General Maintenance

Jonathan Smith  
Painter/General Maintenance

Sandy Spurling  
Projects Officer

Wilfred J. Stovell  
Maintenance  
Superintendent

Georgianna White  
Laboratory Attendant

Bruce Williams  
Laboratory Operations  
Technician

Warren Smith  
Electrician/Plumber

Kenneth Trott  
Truck/Bus Driver

Gregory Wade  
General Maintenance

William Welton  
Chief Financial and Operating  
Officer

Martin Wyer  
Human Resources Manager

## Development, Communications & Marketing

Pamela Amaral  
Development Officer

Mark Guishard, PhD  
Director of Corporate and  
Community Relations

Ali Hochberg  
Science Writer and Webmaster

Amy Nevala  
Science Writer

Audrey Rogerson, PhD  
Director of Resource  
Development

Tiffany Wardman  
Marketing and Media Relations  
Manager



## Bermuda Institute of Ocean Sciences

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