M/V Alucia and the Dalio Ocean Initiative

Rob Munier
Vice President
Woods Hole Oceanographic Institution

Vincent Pieribone
Chairman
Dalio Ocean Initiative
• Historical Perspective - Rob
• Dalio Ocean Initiative - Vincent
• Discussion
Ray Dalio

Founder and Principal, Bridgewater Associates
Dalio Foundation, Ray and Barbara Dalio
Founder, Dalio Ocean Initiative

- Philanthropist
- Ocean enthusiast and advocate
- Ideas into action
M/V Alucia

Ex-Nadir
56 m
1300 tons
42 berths

Woods Hole Oceanographic INSTITUTION
# Key Milestones

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
</table>
| 2011 | Acquisition of Alucia  
1st Alucia refit |
| 2012 | First Mission – Giant Squid  
WHOI management of Alucia |
| 2013 | Alucia Productions founded  
Acquisition of REMUS 6000  
Acquisition of Umbra |
| 2014 | REMUS lease executed  
WHOI management of Umbra |
| 2015 | Acquisition of VPR  
Alucia bareboat charter  
Dalio Ocean Initiative established |
| 2016 | Acquired Volstad Surveyor  
Sold Umbra |
An Evolutionary Process

- Create a credible oceanographic capability through investments and partnerships
- Focus on science and exploration
- Create a capability to address awareness issue
- Add media element
- Launch missions that meet a high science and media bar
- Create integrated solution

*Participate and enjoy the process along the way*
M/V Alucia - Operations

**Commercial Arrangement**

Owned by Beta Maritime (an SPE)
Operated by WHOI under bareboat charter
Charter revenues go to WHOI
Capital improvements paid by BM as approved
Submersibles

**HOV Triton**
- 3 person
- 1000 m
- Top load
- Platform for HD imagery

**HOV Deep Rover 2**
- 2 person
- 1000 m
- Bottom load
- Platform for science and imagery

Woods Hole Oceanographic Institution
Helicopter
Dive System

Woods Hole Oceanographic INSTITUTION
Alucia Mission Control
Projects

Fabricate new sphere for DR 2 submersible 2014

Provide motion compensated oceanographic winch system 2013

Woods Hole Oceanographic Institution
Projects

M/V Alucia in dry dock, Bay Ship & Yacht, Alameda, CA  2015

Engineer, procure and install soot elimination system  2013
REMUS 6000

Commercial Arrangement

Owned by Dalio Foundation
Managed by WHOI under lease agreement
Annual O&M fee paid to WHOI
Project revenues go to WHOI
Use Fee paid to DF per operational day
Capital improvements paid by DF as approved

Projects

Deep bathymetric surveys
Searches
Remus 6000

Spanish Galleon San Jose

Woods Hole Oceanographic INSTITUTION
Commercial Arrangement

Owned by Dalio Foundation
Managed by WHOI under no-cost lease
Charged at cost; no fee for use
Capital improvements paid by DF as approved
Grant for development of next gen VPR

Projects

Trans-Pacific
Tropical Atlantic
Alucia Operational Summary

Science missions: 26
Media Missions: 15
Private Missions: 8
Total: 49

Shipyard Periods: 4
Maintenance periods: 2
Crossings of the Pacific: 2
Crossings to Antarctica: 3

Countries visited: 20

US, Japan, Micronesia, Palau, New Zealand, Solomon Islands, Australia, Papua New Guinea, Indonesia, Vanuatu, French Polynesia, Easter Island, Fiji, Costa Rica, Panama, Mexico, Chile, Antarctica, Uruguay, Brazil

Woods Hole Oceanographic Institution
Research

Buesseler et al, Bikini, 2015

Whale Sharks, Galapagos, Pretoma

Jenouvrier et al, Antarctica, 2015-2016

Pineda et al, Panama, 2015

Woods Hole Oceanographic Institution
Technology

Nereid Hybrid Tether
Optical Communications
CPICS

Woods Hole Oceanographic INSTITUTION
Published papers by WHOI scientists regarding Datio, Datio Ocean Initiative, Datio Family as of 6/20/17


Media

BBC
NHK
Atlantic Productions
Alucia Productions
MFF
Silverback

Woods Hole Oceanographic Institution

Paul Nicklen
Three Thumbs Up

- Good science
- Good media
- Economic sustainability
“Three Thumbs Up” Missions

Giant Squid  NHK  Japan

Bioluminescence  AMNH  Solomon Islands

Years of Living Dangerously  Bahamas, Turks & Caicos, Haiti

Woods Hole Oceanographic Institution

Documentary  Great Barrier Reef  David Attenborough
### 2017 Vessel Mission Partnership Summary

<table>
<thead>
<tr>
<th>Location</th>
<th>Dates</th>
<th>Mission</th>
<th>Media Partner</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montevideo, Uruguay</td>
<td>Mar - Apr</td>
<td>Maintenance &amp; ABS Survey</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>1. Sao Paulo Coast, Brazil</td>
<td>Apr 24 - May 5</td>
<td>Bioluminescence Discovery</td>
<td>MacGillivray Freeman</td>
<td></td>
</tr>
<tr>
<td>2. Fernando de Noronha, Brazil</td>
<td>May 15 - 28</td>
<td>Spinner Dolphins &amp; Cookiecutter Sharks</td>
<td>MacGillivray Freeman</td>
<td></td>
</tr>
<tr>
<td>3. Fernando de Noronha, Brazil</td>
<td>June 1 -14</td>
<td>Spinner Dolphins</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>5. Mouth of Amazon, Brazil</td>
<td>Jul 13 - 26</td>
<td>Coral Discovery &amp; Exploration</td>
<td>PBS BBC</td>
<td></td>
</tr>
<tr>
<td>6. Transit from the Amazon to Cartagena</td>
<td>Jul 30 – Aug 10</td>
<td>VPR II Transit</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>8. Florida</td>
<td>Sep 13 - 24</td>
<td>Lophelia Reefs</td>
<td>Silverback</td>
<td></td>
</tr>
<tr>
<td>9. Cuba</td>
<td>Oct 12 - 27</td>
<td>RTD trip</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>10. Cuba</td>
<td>Oct 31 – Nov 11</td>
<td>Gardens of the Queen</td>
<td>University of British Columbia</td>
<td></td>
</tr>
<tr>
<td>11. Cuba</td>
<td>Nov 12 – 24</td>
<td>Bioluminescence</td>
<td>MacGillivray Freeman</td>
<td></td>
</tr>
</tbody>
</table>


- **Required maintenance stops:**
- **Missions with approved VCMs:**
- **Missions with VCM approval requested:**
Setting the Stage

- Access to resources
- A new model
- Nimble
- Investment in Infrastructure
- O&M

An opportunity for partnerships