OCEAN DISCOVERY LEAGUE

# STRATEGIC OVERVIEW

2023-2024

As we look to the future of deep ocean exploration, it comes down to one word: **acceleration**. If the past year's climate change news has revealed anything, we do not have time to continue exploring the deep slowly and expensively. We need lower-cost solutions in the hands of more people in targeted deep-sea areas to characterize this critical biosphere before it's too late.

The future path is clear. To fully characterize the deep sea over the next decade, we need:

- ***Targeted Exploration:*** Identifying and exploring locations that, when observed and sampled, will allow us to characterize the deep ocean effectively.
- ***Lower Cost and Easier to Use Tools:*** Developing low-cost, high-quality tools, deployment systems, and data analysis solutions. We also need the deep-sea community to accept that low-cost solutions do not produce low-cost data and that any observations are better than none. The sooner the community adopts this approach, the faster we can complete this work.
- ***A Broader Community of Explorers:*** Deep ocean exploration can no longer be limited to the select few with the means and methods to conduct this research. 76% of countries in the world have deep ocean in their EEZ, and they need the tools to explore them before making decisions that will irreparably destroy this landscape.

We look forward to working with all of our partners to drive these initiatives forward throughout 2024 and beyond.

**Regards,**

**Dr. Katy Croff Bell**
Founder and President

# VISION

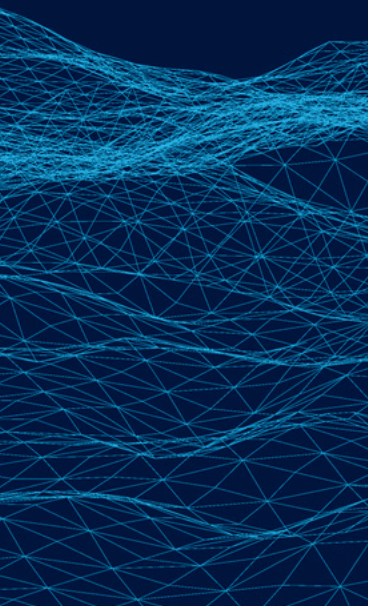
**Our vision is a discovered, thriving ocean.**

# MISSION

Our mission is to accelerate deep ocean exploration by developing accessible systems to broaden the community of those who explore and understand the deep sea.

# THEORY OF CHANGE

Ocean Discovery League's theory of change is that IF we make deep ocean exploration tools and training more affordable and accessible and expand the community of global deep ocean explorers, THEN we will dramatically accelerate a strategic and representative characterization of the deep seafloor.



OCEAN DISCOVERY LEAGUE

# ABOUT

Ocean Discovery League was founded in 2021 and is led by National Geographic Explorer Dr. Katy Croff Bell. Before founding ODL, Bell was the Founding Director of the Open Ocean Initiative at the MIT Media Lab and Vice President and Chief Scientist of the Ocean Exploration Trust. She created ODL as a 501(c)3 not-for-profit organization to focus on operationalizing deep-ocean innovation, understanding, and community building. ODL's team members have decades of experience in deep-sea exploration, computer science, community building, strategy, and science communication.

# THE TEAM

**Dr. Katy Croff Bell**
President & Founder

**Susan Poulton**
Vice President, Strategy & Communications

**Dr. Brian Kennedy**
Chief Scientist

**Dr. Kristen Johannes**
Research Scientist

**Kylie Pasternak**
Systems Engineer

**Nadiah Rosli**
Capacity Development Program Manager

**Tapas Dwivedi**
Product Manager

**Dr. Dan Novy**
Imagineer

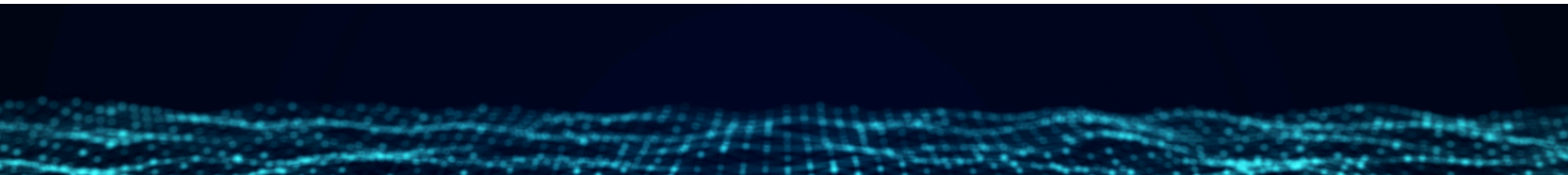
# THE CHALLENGE

Sixty-six percent of the planet's surface is ocean deeper than 200 meters, making the deep sea the single largest—and most critical—habitat on Earth. The deep sea is the planet's life-support system. It feeds the upper ocean, providing more than half the oxygen we breathe, supplying 20% of humanity's protein needs, and supporting a $1.5T global ocean economy. Despite its critical role, the deep ocean is virtually unexplored. With human impacts on the deep ocean increasing, closing the gap on our lack of understanding of this vital ecosystem is paramount to human survival.

Current technologies required to access the deep sea are large, expensive, proprietary, and slow. At the current rate and methods of deep ocean exploration, it would take tens of thousands of years and a quadrillion dollars to see the entire seafloor once. We urgently need a strategic approach to generate a globally representative, statistically robust, standardized, and comprehensive visual sample of the deep seafloor before we destroy this ecosystem irreparably.

# OUR SOLUTION

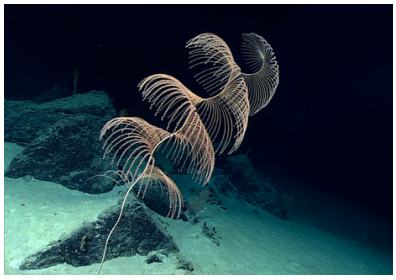
By lowering the cost-prohibitive and logistical barriers to deep-sea exploration, we aim to broaden access to communities historically excluded from ocean exploration and research and expand the area of the seafloor explored and characterized while reducing the cost. We will use an integrated approach to expand the deep sea community to collect critical baseline data about the ocean. This understanding will inform critical ocean health issues, ranging from deep sea mining to marine protected areas. Ultimately, we aim to diversify the deep-sea exploration field and broaden our knowledge of the ocean to make wise decisions regarding its use.



# AREAS OF FOCUS

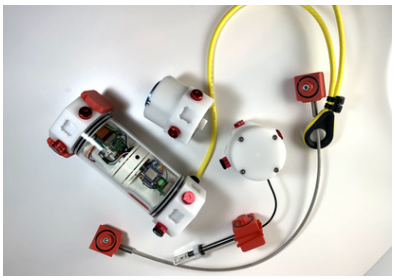
We believe the solution to characterizing the entire deep seafloor lies at the intersection of targeted exploration, lower-cost and easier-to-use technology, and a broader community of global ocean explorers. All three of these focus areas working together are needed to dramatically accelerate deep ocean exploration.

### Targeted Exploration



Create targeted seafloor locations that provide an equitable and representative sample and establish the first full characterization of the entire deep sea floor.

### Low-Cost and Accessible Technology

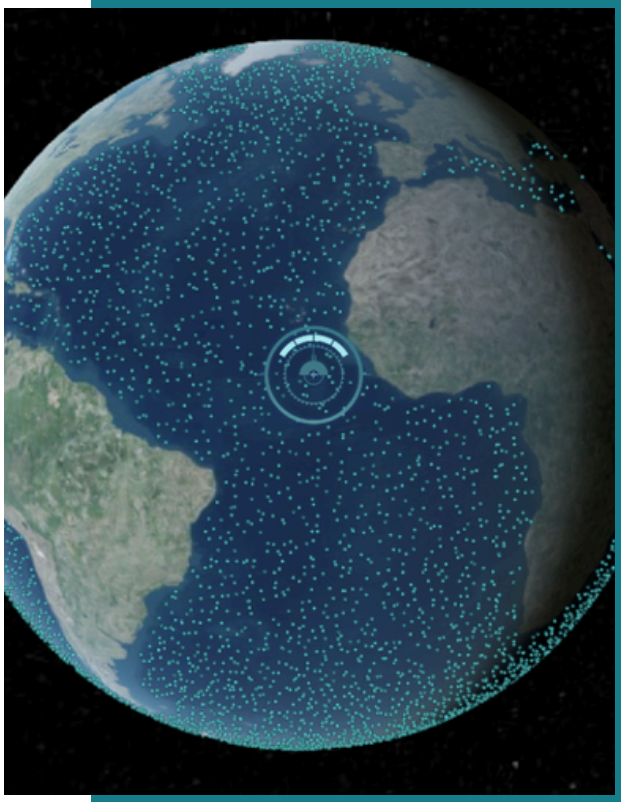


Collaboratively develop low-cost, easy-to-use data collection and analysis systems to reduce barriers to data collection and accelerate analysis. This includes artificial intelligence and other software analysis tools.

### Broadening the Community

Expand the community of deep-sea explorers through education and training with historically excluded communities.

# TARGETED EXPLORATION



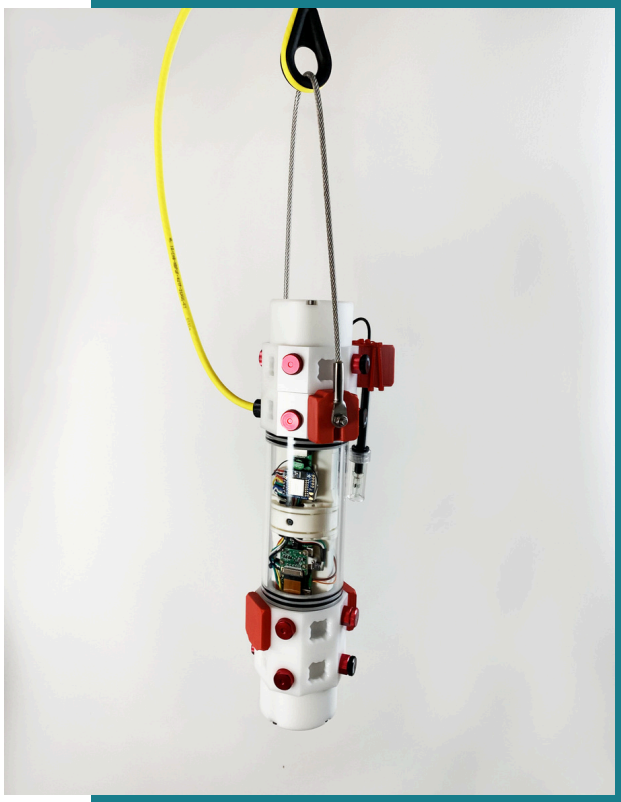
Ocean Discovery League is developing the Global Deep Sea Exploration Goals–10,000 targeted seafloor locations that, when visually explored, will provide an equitable and representative sample and establish the first complete characterization of the entire deep sea floor.

These targets are generated using an algorithm developed by our research scientists and are selected based on several criteria, including previous observation status, the potential for unique bathymetry and biodiversity, available local exploration resources, and input from our partners and global experts. We are building an open-source platform that all ocean explorers and researchers worldwide can use to plan research and expeditions and communicate progress toward these goals to the research community and the general public.

Visual imaging is one of the most critical, non-invasive methods to study the ocean. It allows researchers to provide situational context to collected samples, observe marine life behaviors and interactions, conduct more accurate biodiversity and abundance surveys, and simultaneously gather biologic and geologic data and assessments. Visually characterizing the deep sea is a critical component, along with seabed mapping and biological sampling, to fully describe this ecosystem.

These goals, in combination with ODL's work globally to proliferate low-cost, deep-sea data collection tools and build capacity in historically underrepresented and under-resourced communities, will exponentially increase deep-sea observations worldwide over the next fifteen years. More importantly, it will fill in the gaps and create the first globally equitable characterization of this landscape. Equity is key to protecting the wonder and health of the ocean, and this approach can help us achieve it.

# LOW-COST ACCESSIBLE TECHNOLOGY



At ODL, we have a track record of success in developing low-cost ocean sensors. Our first low-cost sensor system, Maka Niu (1,500 m depth, ~$900 USD), was created in 2020-2021, eleven units of which are currently in the field worldwide. In 2020, we developed a prototype modular system, Wayfinder (150 m depth), which provided critical lessons in developing modular oceanographic systems. We aim to combine the strengths of the two systems into our next generation of deep-diving, low-cost sensors, DORIS (Deep Ocean Research & Imaging System).

DORIS is a novel, customizable tool consisting of interchangeable sensing and operational modules deployable in various configurations tailored to user mission objectives. The high degree of modularity gives users considerable freedom to choose their missions and create a technological solution that will meet their needs. DORIS can also integrate with our artificial intelligence-driven data processing tools (Ocean Vision AI) for video and sensor data aggregation, analysis, and archiving to accelerate the pace of discovery for our users.

# BROADENING THE COMMUNITY

We aim to create equity in deep-ocean exploration by co-designing accessible, low-cost opportunities and systems for ocean explorers worldwide, dramatically increasing and accelerating our ability to observe and measure the ocean.

ODL's Deep-Sea Capacity Development program will be our flagship equity experience to identify, train, and support ocean explorers and researchers from historically excluded backgrounds to foster a global demographic and generational shift that will change how we understand and care for our oceans. In 2024 we are launching our pilot program, co-designed with individuals from representative countries. We will modify it based on feedback and scale it as a model to build sustainable infrastructure and environmental justice for deep-sea exploration and science worldwide. This program will be a launching point for unlocking future opportunities for individuals and countries, changing their long-term trajectories, and creating transformative change in the field.

# 2023 YEAR IN REVIEW

- Continued support of our low-cost imaging and sensing system, Maka Niu, in more than ten countries, including with new collaborators in the Quinault Indian Nation, Cameroon, and the Philippines. We also tested new Maka Niu deployment systems during the NOAA Ocean Exploration EXPRESS campaign aboard NOAA ship *Okeanos Explorer*.

- Participated in OceanX's Young Explorer program aboard *OceanXplorer*, providing hands-on research and mentorship opportunities to 16 university students in storytelling, marine biology, and ocean exploration.

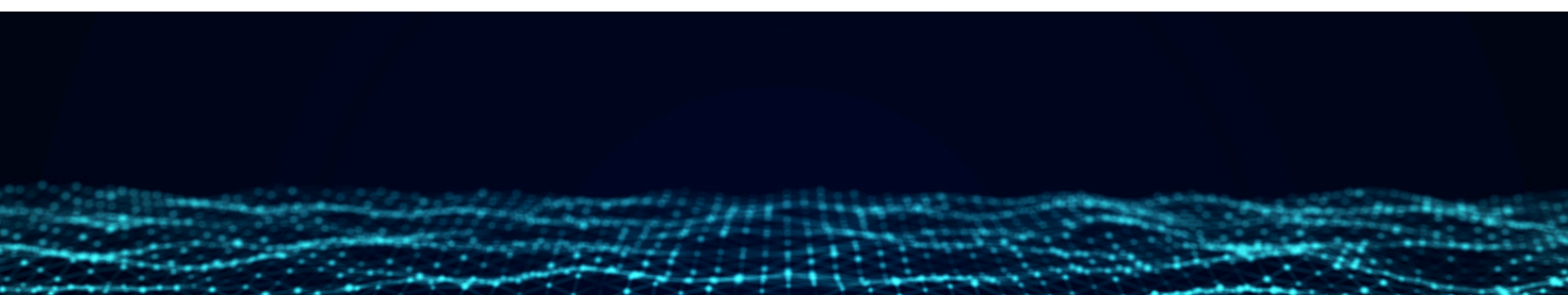
- Development of our Ocean Equity Program to identify, train, and support ocean explorers and researchers from historically excluded backgrounds to foster a global demographic and generational shift that will change how we understand and care for our oceans.

- Launched Ocean Exploration Day on January 23, 2023, with an online event featuring explorers Drs. Don Walsh and Dawn Wright, in celebration of the wonder of and need for deep-sea research and exploration.

- Released a new analysis of our 2022 Global Deep-Sea Capacity Assessment based on economic groups and small island developing states. This important foundational study underpins our work as we move toward a more equitable future of deep-sea exploration and research.

- Compiled a database of past deep-sea dives to examine exploration historical efforts, patterns, and future needs. Using this information, we initiated tools to enable representative exploration of the global deep seafloor.

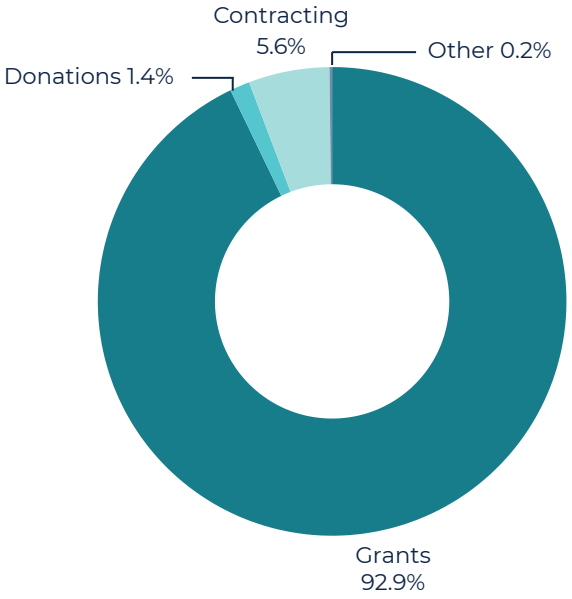
- Continued our work with the Ocean Vision AI team to streamline access to artificial intelligence and machine learning tools to accelerate the analysis of ocean visual data.



# 2023 FINANCIALS

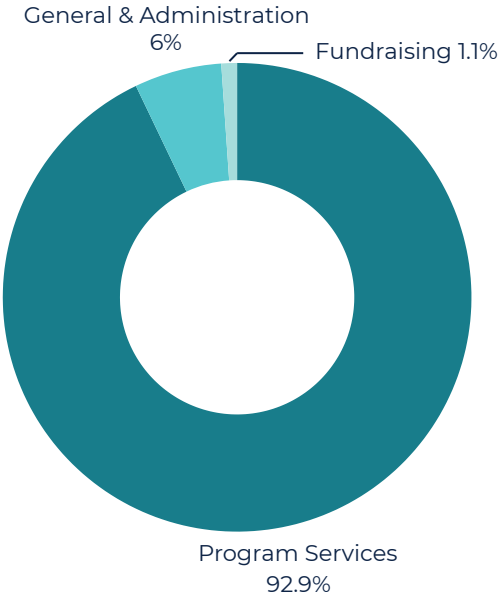
## INCOME

| | |
|---|---|
| Grants | $1,758,734 |
| Donations | $26,095 |
| Contracting | $105,788 |
| Other | $3,375 |
| **TOTAL** | **$1,893,992** |




## EXPENSES

| | |
|---|---|
| Program Services | $1,238,743 |
| General & Administration | $80,368 |
| Fundraising | $14,435 |
| **TOTAL** | **$1,333,545** |




**END-OF-YEAR SUMMARY**

| | |
|---|---|
| Beginning of 2023, Net Assets | $592,962 |
| Change in Net Assets | $676,929 |
| **END OF 2023 NET ASSETS** | **$1,269,892** |

*Pending 2023 Financial Audit

# THANK YOU TO OUR PARTNERS

Our work would not be possible without the support and funding of our partners and donors.












# Equity is key to protecting the wonder and health of the ocean.

www.oceandiscoveryleague.org

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