

# Pushing the Frontiers of Ocean Exploration



At Oceanology International's Catch the Next Wave, on Thursday 15 March 2018, XPRIZE will award US \$1 million to be split equally amongst nine finalist teams in the Shell Ocean Discovery XPRIZE. The theme for the day is 'Frontiers of Exploration' and is sponsored by The Explorers Club. The focus of Catch the Next Wave aligns with the impacts that this global competition is designed to achieve: to advance and highlight technologies that allows us to explore, whether that be in space or in the ocean.

After a semi-final competition round that saw its fair share of ups and downs, these nine teams have successfully demonstrated their entries to the independent and international seven-member judging panel, and have now qualified to move on to the final round. The initial Round 1 semi-finals test was

to take place off Puerto Rico, but following the devastating hurricanes in September 2017 it was clear that the plan had to change. XPRIZE revised Round 1 into a Technology Readiness Test, and XPRIZE staff and judges conducted site visits between November 2017 and February 2018.

The nine teams of finalists – ranging from university students and professors to groups of professional deep-sea operational experts, and even a (currently) one-man team – are remarkable for their diversity in make-up, approaches and innovations. Above-sea-surface components of the entries include an aerial drone and a range of autonomous docking and deployment surface vessels. For the sub-surface components, competing alongside more traditional AUVs are smaller units working in swarms to map the sea floor quickly and cheaply. Teams are also exploring the possibility of mapping the sea floor in novel ways – not the boustrophedon manner that is often used to map the deep-sea floor.

The audacious challenge the nine finalists face in the second and final round is exponentially greater: a real-world challenge in which they will have to map at least 50% of a 500km<sup>2</sup> area at 5m or higher horizontal resolution at 4,000m depth and collect ten images, all within 24 hours. These teams will be doubling their efforts over the next few months as they prepare to compete for the remaining US \$5 million grand prize purse focused on mapping and imagery.

Also still on the table is a US \$1 million National Oceanic and Atmospheric Administration (NOAA) Bonus Prize. As a consequence of the hurricanes, the initial test for this Bonus Prize was decoupled from the primary competition. The technology being incentivised will give the industry the ability to detect a chemical or biological signal underwater and autonomously trace it to its source.

The technologies that these teams are developing will provide easier access to remote regions of the ocean. They will be instrumental in achieving the ultimate Nippon Foundation-GEBCO Seabed 2030 goals: to have a high-resolution map of the entire seafloor by 2030. This vision is shared by XPRIZE. The nine finalist teams, with team members from 25 countries, are now preparing to take another giant step as we continue to push the 'Frontiers of Exploration'.

## **Closing Keynote at Oi18**

*Dr Virmani will give a closing keynote at Catch The Next Wave on Thursday 15 March from 16.00-17.00 to formally recognise the Shell Ocean Discovery XPRIZE finalists and the Milestone Prize winners who will be going on to the final round of the competition.*