

OceanObs'19 Conference, An Ocean of Opportunity

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OceanObs is a conference held every 10 years to celebrate the successes of the past decade and to make plans for the next. IEEE OES is an Intellectual Sponsor of the upcoming OceanObs'19 and our participation is led by the Ocean Observation Systems and Environmental Sustainability Technology Committee.

This conference meets every ten years and has had significant impacts on the way that ocean observing is done. The Argo float system is an outcome of OceanObs'99 and the Governance structure "Framework for Ocean Observing" is a product of OceanObs'09. What will be the next step forward? OceanObs'19 seeks to improve response to both scientific and societal needs by a global scale integrated ocean observing system. It is reinforcing the importance of serving society to meet the grand challenges of food, climate, security and sustainability.

Overall, OceanObs'19 will strive to improve the governance of a global ocean observing system, including advocacy, funding, and alignment with best practices and to designate responsibility for product definition, including production and timely delivery at the appropriate scales (global, basin, regional, national) to serve user needs. The Conference flyer gives the vision, the mission and the impacts expected for the meeting.

THE VISION In recognition of the central role the ocean plays in supporting all life on earth, we see a resilient world whose societies prosper through sustainable interactions with our ocean, guided by timely, reliable, and accessible information.

THE MISSION OceanObs'19 is a community-driven conference that brings people from all over the planet to communicate the decadal progress of ocean observing networks and to chart innovative solutions to society's growing needs for ocean information.

THE IMPACT OceanObs'19 will determine how we meet future user needs (information), improve the delivery of products across the globe (interoperability), advance technology and services (innovation), and balance needs, capabilities, and knowledge worldwide (integration). Achieving these outcomes will result in a fit-for-purpose Global Ocean Observing System over the next decade.

Societal benefit themes have been chosen to support the vision and mission. These reflect major issues and opportunities of our times, including:

Discovery

The deep sea is one of the last frontiers of ocean discovery. Rapid technology development is expected to lead to more exciting discoveries of the ocean.

Ecosystem health & biodiversity

Human society benefits from marine biodiversity and healthy ecosystems that are under increasing pressure from multiple

stressors. Observing complex ecosystem, biodiversity, and biogeochemical dynamics in a globally integrated manner is a challenging task for next decade.

Climate variability & change

Monitoring, understanding, and predicting oceanic variations associated with natural climate variability and human-induced changes informs societies on how to plan and adapt to climate impacts. Ocean observers play a key role in shaping climate strategies.

Water, food, & energy security

To sustain provisional and regulating services from the ocean, communication between oceanographers and multiple stakeholders is indispensable in planning and implementing ocean observation and monitoring.

Pollution & human health

Ocean observations are discovering that human activities on-land and at-sea are polluting the oceans at increasing concentrations and depths. Plastic pollution has also captivated the public's attention and observers are finding that their impacts extend to the deepest points of our ocean. Monitoring and assessing these pollutants from source-to-sinks is needed for better management to sustain ocean and human health.

Hazards & maritime safety

Improving ocean forecasts, seasonal and weather predictions, and hazard monitoring translates to more advanced maritime safety, search and rescue, natural disaster prediction, and weather impact resiliency.

Blue economy

Ocean observing data, products, and services underpin the blue economy. Determining how societies leverage ocean businesses is a priority for the next decade.

These societal benefit themes will be examined by their relationship to ocean observing and how information products can be best supported through three observing system themes:

- observing system governance; data & information systems, and
- observing technologies & networks.

The ocean community has contributed significantly to the Conference through Community White Papers (CWP) already submitted to *Frontiers in Marine Science* for peer reviewed publication. Authoring these CWP has brought together experts in our community to discuss current capabilities and to define the vision looking forward. IEEE OES has lead authorship for two papers. One is the "Future Vision for Autonomous and Remote Observing Technologies" led by Christopher Whitt and the second is "Evolving And Sustaining Ocean Best Practices And Standards For The Next Decade" led by Jay Pearlman.

IEEE OES is an Intellectual Sponsor of OceanObs'19. We are pleased to have this role in a decadal ocean event.

If you have the opportunity, we encourage you to attend. The conference will be held at the Hawaii Conference Center, Honolulu HI during September 16-20 2019. Registration is available through <http://www.oceanobs19.net>

The authors note that the contents of this article include selected information on the Conference provided by the organizers.