

CONFERENCE AGENDA

SUNDAY 15 SEPTEMBER: PRE-CONFERENCE

- 1200-1700 EARLY CAREER EVENT** *Hilton Hawaiian Village*
This four-hour event (RSVP required) will empower the next generation of ocean observing leaders through curated mentorship, expert talks, and social interaction. Happy hour and networking to follow.
- 1200-1700 PRE-REGISTRATION** *Kamehameha Exhibit Hall*
Badge pickup and on-site registration open at the Hawaii Convention Center.
- 1400-2200 EXHIBITOR MOVE-IN**

MONDAY 16 SEPTEMBER: PERSPECTIVE

- 0830-0930 REGISTRATION** *Kamehameha Exhibit Hall*
Attendees should arrive early to acquire name badges and programs and to find their way around.
- 0930-1045 WELCOME TO OCEANOBS'19!** *Kalakaua Ballroom*
Representatives from the region, the public, and the OceanObs'19 planning group will open the conference and provide an overview of the OceanObs conference series. What are the successes of the conferences? What opportunities exist going forward? How will we realize our goals as a community?
- SPEAKERS INCLUDE:**
Denise "Dee" Caffari, *The Ocean Race*
Vicky Song, *Clipper Round the World Yacht Race*
Ambassador Peter Thomson, *U.N. Special Envoy for the Ocean (Video)*
Eric Lindstrom, *National Aeronautics and Space Administration*
Martin Visbeck, *GEOMAR Helmholtz Centre for Ocean Research Kiel*
Albert Fischer, *Intergovernmental Oceanographic Commission of UNESCO*
Jan Newton, *Northwest Association of Networked Ocean Observing Systems*
- 1045-1050 OBSERVATIONS IN ACTION (VIDEO PRESENTATION)**
- 1050-1200 CONNECTING OCEAN OBSERVATIONS TO THE USER COMMUNITY** *Kalakaua Ballroom*
A series of short presentations will provide an overview of how ocean observing and the information it generates inform society on a wide range of issues. From efforts to build resilience and reduce disaster risk to how near real-time ocean forecasting supports maritime safety and extreme event warnings; ocean observations are integral to keeping people safe on land and at sea. As we look towards creating a more sustainable future, analyzing ocean trends will allow us to document changes due to human interventions, such as climate change, over exploitation, and pollution, and will help us better understand and plan for the impacts of those changes.
- Craig McLean, *National Oceanic and Atmospheric Administration (Moderator)*
Bronte Tilbrook, *Commonwealth Scientific and Industrial Research Organisation*
Dwikorita Karnawati, *BMKG Indonesian Meteorology, Climatology, and Geophysical Agency*
Sarah Purkey, *Scripps Institution of Oceanography*
David Millar, *Fugro, IHO General Bathymetric Chart of the Oceans (GEBCO) Project*
Vladimir Ryabinin, *Intergovernmental Oceanographic Commission of UNESCO*
- 1200-1330 LUNCH**
- 1330-1430 CONCEPTS SHAPING THE FUTURE OF OCEAN OBSERVING** *Kalakaua Ballroom*
A series of short presentations covering global networks, robotic systems, critical ocean variables, and thematic approaches will provide a glimpse into the many amazing accomplishments in these fields over the last decade. Going forward, the opportunities range from more integrated and comprehensive observing systems to globally shared and interoperable data systems. Presentations will analyze the growth of capacities around ocean observing, data flow, and use, as well as sharing of infrastructures. Presentations will also examine whether this growing, more complex system might benefit from innovation of global, regional, and local governance arrangements.
- Introduction** Tony Lee, *National Aeronautics and Space Administration*
Citizen Science Folasade Adeboyejo, *EcoHub Initiative*
Argo Toshio Suga, *Tohoku University*
Gliders Emma Heslop, *Global Ocean Observing System & JCOMM OCG*
Deep Ocean Lisa Levin, *Scripps Institution of Oceanography*
Seabed Mapping Larry Mayer, *University of New Hampshire*
Marine Genomics Jesse Ausubel, *The Rockefeller University*
Sea Level Rise Anny Cazenave, *National Centre for Space Studies*
TPOS2020 Weidong Yu, *National Marine Environmental Forecasting Center*

CONFERENCE AGENDA CONTINUED

1430-1530 **SUCCESSES AND OPPORTUNITIES FOR OCEAN OBSERVING** *Kalakaua Ballroom*

This moderated session will focus on the overarching achievements of ocean observing in the past decade and what they mean for the future. Each talk will address progress and prospects across the OceanObs'19 themes: Information, Integration, Innovation, Interoperability, and Governance.

(Introduction) **Margaret Leinen**, *Scripps Institution of Oceanography*
Juliet Hermes, *South African Environmental Observation Network*
Melissa Iwamoto, *Pacific Islands Ocean Observing System*
Jillian Campbell, *U.N.Environment Programme*
Asahiko Taira, *Japan Agency for Marine-Earth Science and Technology*
John Gunn, *University of Tasmania*

1530-1600 **BREAK**

1600-1800 **KUPAIANAHA INDIGENOUS EVENT** *Kalakaua Ballroom*

This kupaianaha (wonderful, amazing) event will celebrate how local and indigenous communities can teach the ocean observing community how to set the pace for innovative marine resource management. In addition to remarks from key leaders, it will include a traditional chant, hula, conch blowing and a performance by award-winning local vocalist and Grammy nominee Raiatea Helm and her band.

1800-2030 **OPENING RECEPTION** *Rooftop Garden*

Following the special event, conference delegates and RSVP'd guests are invited to congregate on the Convention Center's Rooftop Garden for a reception, sponsored in part by Saildrone, with tropical drinks, beer, wine, food, music, and remarks from the ocean observing community.

TUESDAY 17 SEPTEMBER: **INFORMATION**

0800 **EXHIBIT HALL OPENS FOR DAY** *Kamehameha Exhibit Hall*

0830-0930 **FLOW OF THE CONFERENCE** *Kalakaua Ballroom*

Sabrina Speich, *École Normale Supérieure*
Chris Sabine, *University of Hawaii*
Prince Albert II of Monaco (Video)

0930-1100 **INFORMATION PLENARY: HOW DO WE MEET FUTURE USER NEEDS?** *Kalakaua Ballroom*

Drawing from the collective knowledge of the Community White Papers, recommendations, and session proposals, this plenary will examine the push and pull of ocean information and define critical aspects of collecting, disseminating, and utilizing it. Our speakers will address user needs as well as shaping collection methods and accessible data products to better serve the entire ocean observing community and society.

Minhan Dai, *Xiamen University (Session Chair)*
Monica Muelbert, *Universidade Federal de São Paulo (Session Chair)*
Lixin Wu, *Qingdao National Laboratory for Marine Science and Technology*
Pierre-Yves Le Traon, *Mercator Ocean International*
Ana Micaela Martins Sequeira, *University of Western Australia*
Mark Hindell, *University of Tasmania*

1100-1130 **BREAK**

1130-1230 **ENABLING THE GLOBAL OCEAN OBSERVING SYSTEM: REALITIES AND OPPORTUNITIES** *Kalakaua Ballroom*

This panel will investigate the opportunities and challenges of transforming and delivering ocean observing data into practical information. Speakers will draw upon perspectives from around the world and different levels of capabilities in addition to the intergovernmental view of how modern networks of ocean information can enhance science and society over the next decade. Our panelists will converse with the community on their experiences working with ocean observing data and communication systems.

Laura Lorenzoni, *National Aeronautics and Space Administration (Moderator)*
Susan Wijffels, *Woods Hole Oceanographic Institution*
Mike Fedak, *University of St. Andrews*
Lauren Weatherdon, *U.N.Environment Programme World Conservation Monitoring Centre*
Maria Paz Chidichimo, *National Scientific and Technical Research Council*

SPECIAL SESSIONS

Special Sessions are town hall-style events that focus on unique ocean observing topics and offer the opportunity to take a deeper dive into important topics identified as a priority by our sponsors.

OCEAN OBSERVATIONS AND THE BLUE ECONOMY *Room 319A/B*

Australian Institute of Marine Science
Commonwealth Scientific and Industrial Research Organisation

A SUSTAINABLE, FIT-FOR-PURPOSE OCEAN OBSERVING SYSTEM: RESPONDING TO USER NEEDS *Room 316B*

European Commission

END USER ENGAGEMENT: A PERSPECTIVE FROM CHINA *Room 317A*

Chinese Sponsors Group

DESIGN AND IMPLEMENTATION OF A GLOBAL HARMFUL ALGAL BLOOM OBSERVING SYSTEM *Room 323C*

Scripps Institution of Oceanography

AN OCEAN OF DATA: NOAA'S ROLES IN MARINE EXTREME EVENTS AND HAZARDS *Room 323A/B*

National Oceanic and Atmospheric Administration

1230-1400 **LUNCH**

CONFERENCE AGENDA CONTINUED

1400-1600 BREAKOUT SESSIONS

Breakout Sessions are a core component of the OceanObs'19 conference, designed to provide a focused discussion forum for the community. Topical sessions organized by daily theme will aim to generate feedback on the conference themes and goals, recommendations to improve global ocean observing governance, and a vision for the next decade of ocean information.

- BLUE ECONOMY AND SUSTAINABLE DEVELOPMENT** Room 317A
Claire Jolly, *Organisation for Economic Co-operation and Development*
- CAPACITY BUILDING** Room 318 A
Brian Arbic, *University of Michigan*
- CLIMATE CHANGE AND VARIABILITY** Room 316A
Karina von Schuckmann, *Mercator Ocean International*
- ECOSYSTEM HEALTH AND BIODIVERSITY** Room 316B
Maury Estes, *University of Alabama in Huntsville*
- GLOBAL OBSERVING SYSTEM FOR MARINE DEBRIS** Room 323C
Francios Galgani, *IFREMER*
- INTEGRATED OCEAN OBSERVATIONS I** Kalakaua Ballroom
Jack Barth, *Oregon State University*
- OCEAN, WEATHER, AND CLIMATE FORECASTING** Room 316C
Eric Chassignet, *Florida State University*

1600-1800 OCEANOBS'19 SHOWCASE AND POSTER SESSION Kamehameha Exhibit Hall

The OceanObs'19 showcase is more than a commercial exhibit hall. A mixture of interactive observation exhibits, Ocean of Opportunity poster sessions, Hawaiian happy hours, ocean photobooths, and scientific talks will expand the network of the ocean observing community and display a comprehensive vision of its collective work. Come discover something new through your own observations in the showcase.

WEDNESDAY 18 SEPTEMBER: INNOVATION

0800 EXHIBIT HALL OPENS FOR DAY Kamehameha Exhibit Hall

0830-0930 REPORT OUTS AND AUDIENCE ANALYSIS Kalakaua Ballroom

Session leads from the previous day will report out on their key recommendations. Audience members will have the opportunity to opt-in to recommendations virtually through the conference software.

0930-1100 INNOVATION PLenary: HOW CAN WE ENABLE NEW TECHNOLOGIES, PRODUCTS, AND SERVICES? Kalakaua Ballroom

Novel innovation is the cornerstone of all societal advancement. This plenary will examine how we spur innovation in observing technologies, products, and user services. Our speakers will discuss new developments and practices that satisfy users' operational information needs, enable visionary new science, and meet interoperability goals.

- Justin Manley, *Just Innovation Inc. (Session Chair)*
- Moninya Roughan, *MetOceanSolutions (Metservice) (Session Chair)*
- Wendy Watson-Wright, *Ocean Frontier Institute*
- Marlon Lewis, *Dalhousie University*
- Jyotika Virmani, *XPRIIZE*

SPECIAL ANNOUNCEMENT: Daniel Simmons, *U.S. Department of Energy*
Neil Jacobs, *National Oceanic and Atmospheric Administration*

1100-1130 BREAK

1130-1230 OCEAN OBSERVING IN THE NEXT DECADE: EMERGING IDEAS Kalakaua Ballroom

This panel will highlight recent and needed innovations in science, technology, and economics that may have a major influence on the direction of ocean observations and a global observing system. Panelists will provide fresh perspectives on the fundamental and imperative changes coming in the next decade of ocean observing.

- Justin Manley, *Just Innovation Inc. (Moderator)*
- Moninya Roughan, *MetOceanSolutions (Metservice) (Moderator)*
- Riley Hathaway, *Young Ocean Explorers*
- Tim Janssen, *SoFar Ocean*
- Roger Hine, *Jupiter Foundation*
- Vicki Ferrini, *Lamont-Doherty Earth Observatory*

SPECIAL SESSIONS

Special Sessions are town hall-style events that focus on unique ocean observing topics and offer the opportunity to take a deeper dive into important topics identified as a priority by our sponsors.

HOW RESEARCH INSTITUTIONS WILL ENABLE INNOVATION FOR THE GLOBAL OCEAN OBSERVING SYSTEM (GOOS) OVER THE NEXT DECADE Room 323A/B

Japan Agency for Marine-Earth Science and Technology

NASA'S OCEANOGRAPHY FROM SPACE Room 319A/B

National Aeronautics and Space Administration

INNOVATION IN OCEAN OBSERVING PLATFORMS AND INFRASTRUCTURE Room 316B

University of Hawaii

POWERING THE BLUE ECONOMY: ENERGY INNOVATION FOR OCEAN OBSERVATIONS Room 317A

U.S. Department of Energy

INCORPORATING ENVIRONMENTAL DNA INTO GLOBAL OCEAN OBSERVING SYSTEMS: OPPORTUNITIES AND CHALLENGES Room 323C

Scripps Institution of Oceanography
Monterey Bay Aquarium Research Institute

1230-1400 LUNCH

CONFERENCE AGENDA CONTINUED

1400-1600 BREAKOUT SESSIONS

Breakout Sessions are a core component of the OceanObs'19 conference, designed to provide a focused discussion forum for the community. Topical sessions organized by daily theme will aim to generate feedback on the conference themes and goals, recommendations to improve global ocean observing governance, and a vision for the next decade of ocean information.

- COMMUNITY BUILDING AND DIALOGUE** Room 323C
Jonathan White, Consortium for Ocean Leadership
- INTEGRATED OCEAN OBSERVATIONS II** Room 316A
Eitarou Oka, University of Tokyo
- MODELING AND ASSIMILATION INNOVATION** Room 323A/B
Andrea Storto, Centre for Maritime Research and Experimentation
Santha Akella, National Aeronautics and Space Administration
- OBSERVING TECHNOLOGY INNOVATION: PLATFORMS AND COMMUNICATIONS** Room 319A/B
Dana Manalang, University of Washington
Jeff Ellen, Defense Advanced Research Projects Agency
- OBSERVING TECHNOLOGY INNOVATION: SENSORS** Room 316B
Rosemary Morrow, Center for Topographic studies of the Ocean and Hydrosphere
- OPEN SOURCE SOFTWARE REVOLUTION** Room 317A
Chelle Gentemann, Earth and Space Research
- U.N. DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT** Room 316C
Vladimir Ryabinin, Intergovernmental Oceanographic Commission of UNESCO

1600-1800 OCEANOBS'19 SHOWCASE AND POSTER SESSION Kamehameha Exhibit Hall

The OceanObs'19 showcase is more than a commercial exhibit hall. A mixture of interactive observation exhibits, Ocean of Opportunity poster sessions, Hawaiian happy hours, ocean photobooths, and scientific talks will expand the network of the ocean observing community and display a comprehensive vision of its collective work. Come discover something new through your own observations in the showcase.

THURSDAY 19 SEPTEMBER: INTEGRATION

0800 EXHIBIT HALL OPENS FOR DAY Kamehameha Exhibit Hall

0830-0930 REPORT OUTS AND AUDIENCE ANALYSIS Kalakaua Ballroom

Session leads from the previous day will report out on their key recommendations. Audience members will have the opportunity to opt-in to recommendations virtually through the conference software.

0930-1100 INTEGRATION PLENARY: HOW DO WE BALANCE NEEDS, CAPABILITIES, AND KNOWLEDGE WORLDWIDE? Kalakaua Ballroom

Interconnecting and balancing the moving parts of the system, this plenary will inspect the equilibrium in addressing user and operator needs, capabilities, and knowledge worldwide. Our speakers will examine how they share ocean observing information from their sectors among both existing and potential users, as well as how our community can enhance access and benefits between regions and nations by engaging new actors and facilitating a more balanced transfer of information and technology.

- Jan Newton, Northwest Association of Networked Ocean Observing Systems (Session Chair)
- John Siddorn, Met Office UK (Session Chair)
- Tim Moltmann, Integrated Marine Observing System
- Claire Jolly, Organisation for Economic Co-operation and Development
- Bennet Atsu Foli, University of Ghana
- Kitty Simonds, Western Pacific Regional Fishery Management Council

1100-1130 BREAK

1130-1230 CONNECTING HUMANITY WITH OCEAN OBSERVATIONS: INTEROPERABILITY AND GOVERNANCE Kalakaua Ballroom

This panel will identify improvements for the governance of a global ocean observing system, including advocacy, funding, and alignment with best practices, and designate responsibility for product definition, including production and timely delivery at the appropriate scales (global, basin, regional, national) to serve user needs. Our speakers will also examine the mechanisms for improvement at their respective levels of governance.

- Katy Hill, World Meteorological Organization (Moderator)
- Patricia Miloslavich, University of Tasmania and Universidad Simón Bolívar
- Caine Taiapa, Manaaki Te Awanui Charitable Trust
- Dick Schaap, Ocean Data Interoperability Platform
- Toste Tanhua, GEOMAR Helmholtz Centre for Ocean Research Kiel

SPECIAL SESSIONS

Special Sessions are town hall-style events that focus on unique ocean observing topics and offer the opportunity to take a deeper dive into important topics identified as a priority by our sponsors.

BUILDING AN INTERNATIONAL TRANSPARENT OCEAN COMMUNITY Room 317A

- Qingdao National Laboratory for Marine Science and Technology
- Commonwealth Scientific and Industrial Research Organisation
- Centre for Southern Hemisphere Ocean Research

FOSTERING AN OCEAN-LITERATE GENERATION: AN APPROACH AT THE INTERFACE OF SCIENCE OUTREACH AND COMMUNICATION Room 323A/B

- Institut de la Mer de Villefranche, IMEV

OCEAN PARTNERSHIPS FOR SUSTAINED OBSERVING Room 319A/B

- Consortium for Ocean Leadership

OBSERVING NEEDS IN THE DEEP OCEAN Room 316B

- Scripps Institution of Oceanography
- National Oceanic and Atmospheric Administration

INDIGENOUS OCEAN GOVERNANCE Room 323C

- Ocean Networks Canada

CONFERENCE AGENDA CONTINUED

1230-1400 LUNCH

1400-1600 BREAKOUT SESSIONS

Breakout Sessions are a core component of the OceanObs'19 conference, designed to provide a focused discussion forum for the community. Topical sessions organized by daily theme will aim to generate feedback on the conference themes and goals, recommendations to improve global ocean observing governance, and a vision for the next decade of ocean information.

ARCTIC OBSERVING Room 316C
Molly McCammon, Alaska Ocean Observing System

DATA INTEGRATION WITH USER PRODUCTS Room 316B
Jessica Hausman, National Aeronautics and Space Administration

GOVERNANCE NEEDS Room 317A
Toste Tanhua, GEOMAR Helmholtz Centre for Ocean Research Kiel

INTEGRATED OCEAN OBSERVATIONS III Room 316A
Patricia Miloslavich, University of Tasmania and Universidad Simón Bolívar

OCEAN BEST PRACTICES Room 319A/B
Jay Pearlman, Institute of Electrical and Electronics Engineers

TRADITIONAL KNOWLEDGE BUILDING Room 318B
Jörn Schmidt, Kiel Marine Science at Kiel University

UNCERTAINTY QUANTIFICATION Room 323C
Aneesh Subramanian, University of Colorado, Boulder

U.N. SUSTAINABLE DEVELOPMENT GOALS Room 323A/B
Paul DiGiacomo, National Oceanic and Atmospheric Administration

1600-1800 OCEANOBS'19 SHOWCASE AND POSTER SESSION Kamehameha Exhibit Hall

The OceanObs'19 showcase is more than a commercial exhibit hall. A mixture of interactive observation exhibits, Ocean of Opportunity poster sessions, Hawaiian happy hours, ocean photobooths, and scientific talks will expand the network of the ocean observing community and display a comprehensive vision of its collective work. Come discover something new through your own observations in the showcase.

1830 LUAU Hilton Hawaiian Village

FRIDAY 20 SEPTEMBER: VISION

0830-0930 REPORT OUTS AND AUDIENCE ANALYSIS Kalakaua Ballroom

Session leads from the previous day will report out on their key recommendations. Audience members will have the opportunity to opt-in to recommendations virtually through the conference software.

0930-1015 FRESH PERSPECTIVES TOWARD OCEANOBS'29 Kalakaua Ballroom

After meeting throughout the conference to collect information and discuss their priorities, groups from the early career ocean observing community will present the perspectives of future users and observers. The panel will report on the content and ideas emerging from OceanObs'19 and their own vision of the next decade and beyond.

Ruth Perry, Shell Exploration and Production (Moderator)
Kerstin Forsberg, Planeta Océano
Michael Vegh, Central Coast Indigenous Resource Alliance
Sheku Sei, Institute of Marine and Antarctic Science
Samuel Wang, Xiamen University
Karina Khazmutdinova, National Academies of Sciences, Engineering, and Medicine
Erin Satterthwaite, National Center for Ecological Analysis and Synthesis & Future Earth
Clarisse Sullivan, University of Hawaii

1015-1045 BREAK

1045-1130 CHARTING THE WAY FORWARD: COMMUNITY VIEWS Kalakaua Ballroom

Members of the Program Committee will articulate the near-term actions to implement the recommendations from the conference and explore opportunities to bring together existing and newly formed groups from the ocean observing community.

Sabrina Speich, École Normale Supérieure (Moderator)
Martin Visbeck, GEOMAR Helmholtz Centre for Ocean Research Kiel
Moninya Roughan, MetOceanSolutions (Metservice)
Justin Manley, Just Innovation Inc.
Jan Newton, Northwest Association of Networked Ocean Observing Systems
Tony Lee, National Aeronautics and Space Administration
Monica Muelbert, Universidade Federal de São Paulo

1130-1215 CHARTING THE WAY FORWARD: SPONSORS' VIEWS Kalakaua Ballroom

Key sponsors will articulate long-term commitments across the major themes of the conference. They will agree to adopting key new principles and recommendations generated at OceanObs'19 to improve the governance of a Global Ocean Observing System; including advocacy, funding, and best practices. The panel will also present steps for aligning the outcomes of OceanObs'19 with the U.N. Decade of Ocean Science for Sustainable Development.

Albert Fischer, Intergovernmental Oceanographic Commission of UNESCO (Moderator)
Minhan Dai, Xiamen University
Liesl Hotaling, Center for Ocean Science Education Excellence – Networked Ocean World
Margaret Leinen, Scripps Institution of Oceanography
David Legler, National Oceanic and Atmospheric Administration
Andreea Strachinescu, European Commission
John Gunn, University of Tasmania
Tarron Lamont, Department of Environmental Affairs, South Africa

1215-1300 ACKNOWLEDGEMENTS, CONFERENCE STATEMENT, AND PATH TO OCEANOBS'29 Kalakaua Ballroom