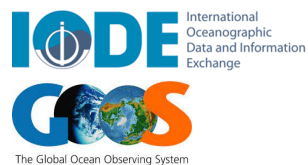


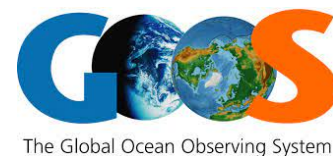
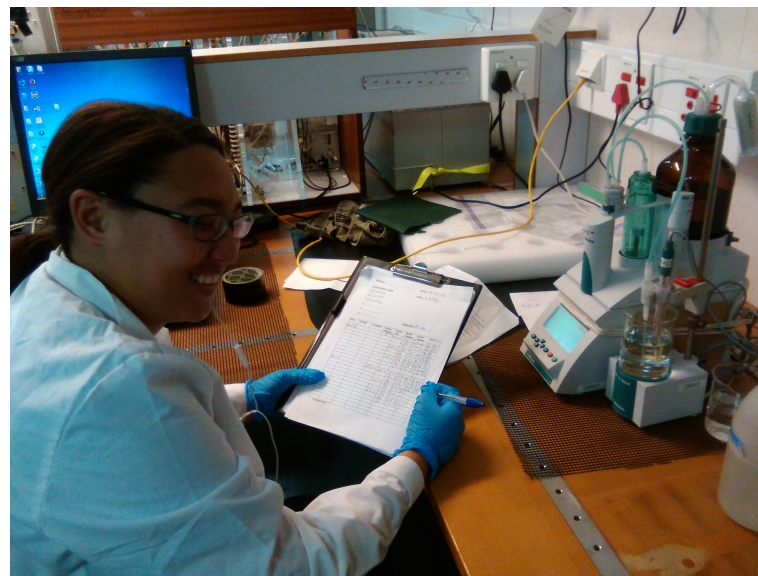


# *Fifth Pacific Islands Training Workshop on Ocean Observations and Data Applications (PI-5)*

**27-28 May and 10-11 June 2021 (Fiji Time, UTC+12)**



*Presented by: Juliet Hermes  
Email: [Juliet@saeon.ac.za](mailto:Juliet@saeon.ac.za)*

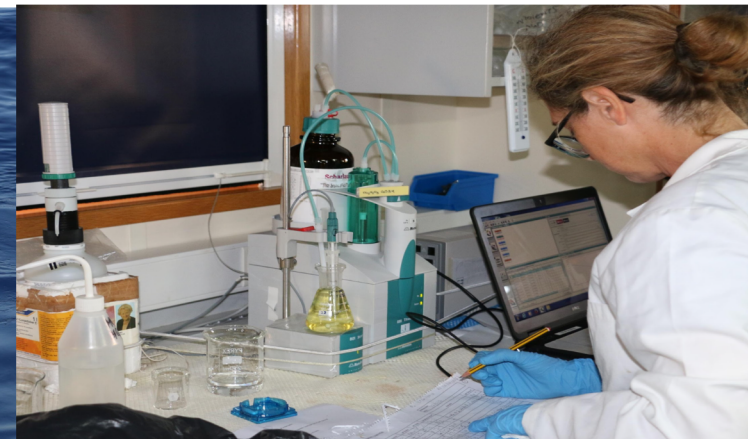
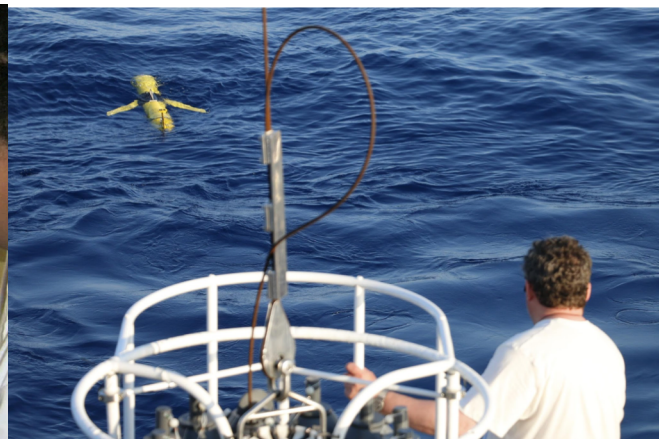
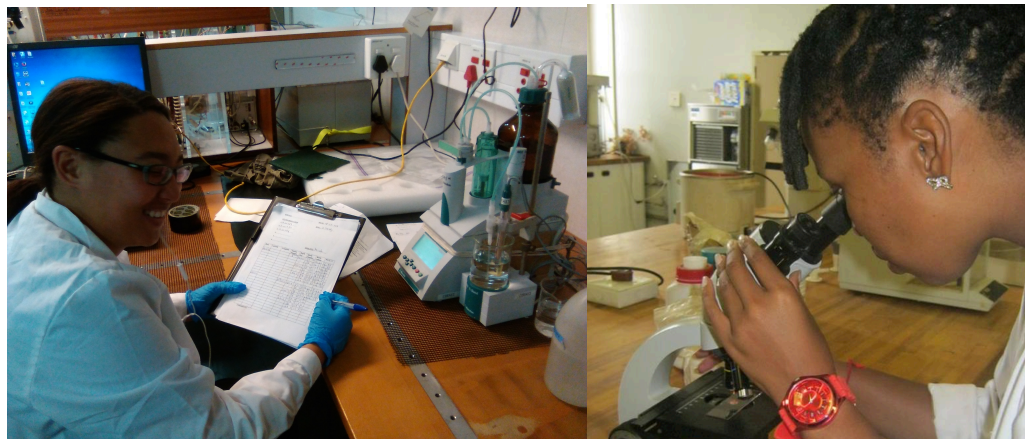




*Part 1:* A **best practice** is a methodology that has repeatedly produced superior results relative to other methodologies with the same objective



*Part 2:* To be **fully elevated to a best practice**, a promising method will have been reviewed, adopted and employed by multiple organizations





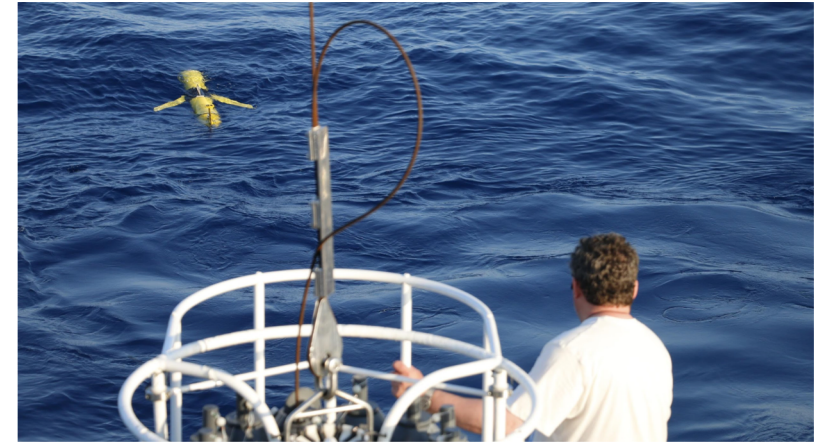
# Ocean Best Practices

## Best practices bring many benefits:

- ✓ Quality and consistency of observations
- ✓ Interoperability of data
- ✓ Efficiency (don't re-invent the wheel)
- ✓ Transparency - Data traceability and reproducibility
- ✓ Connections between data, models and applications
- ✓ Resource for training and capacity development

## **BUT**

- ❓ Not all best practice knowledge is documented
- ❓ They are scattered and can be hard to find
- ❓ Difficult to know which is the right one
- ❓ Can be lost when a project ends
- ❓ Promising methods may not be shared
- ❓ Missing incentives that drive community building

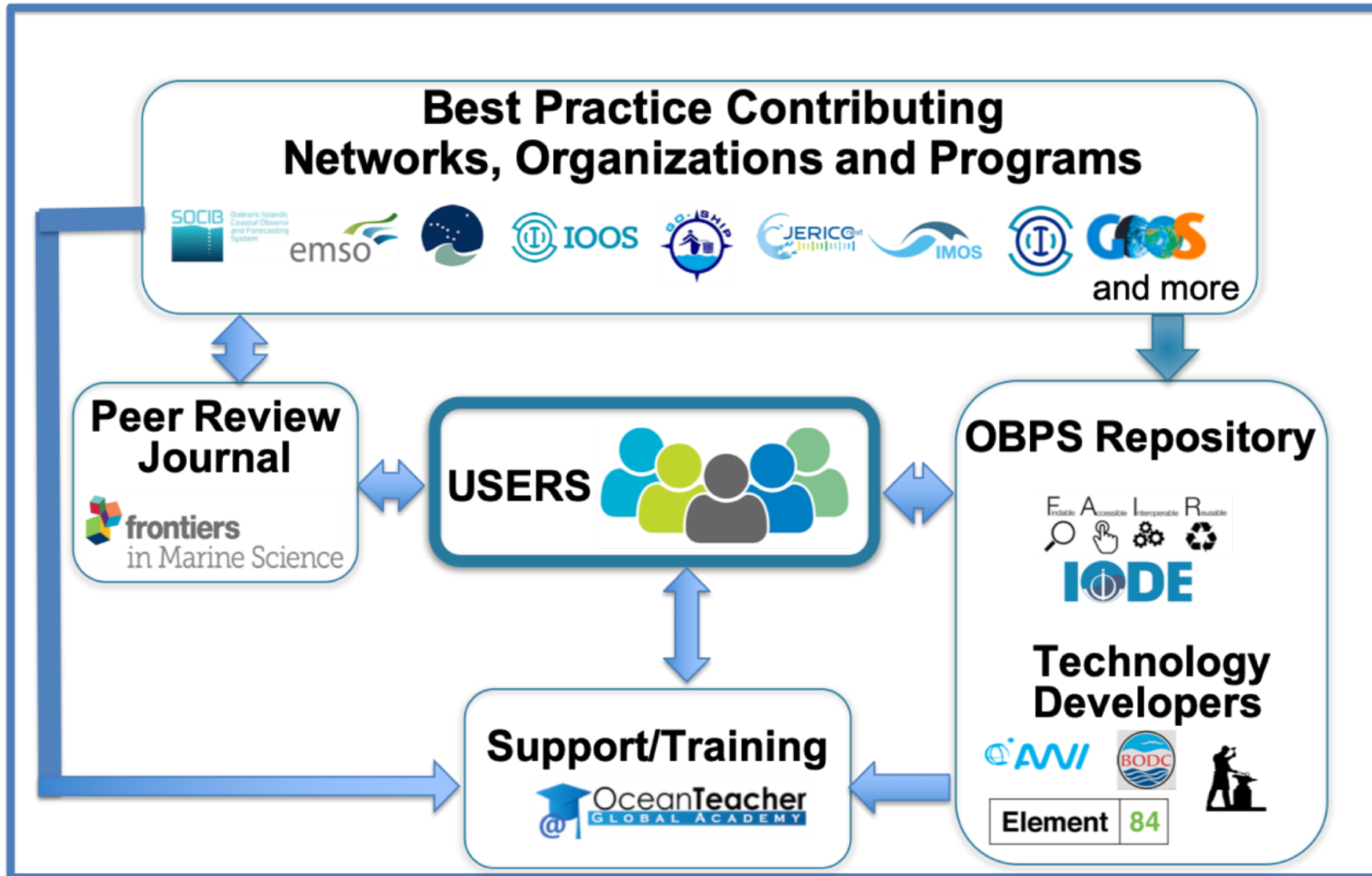


## A system is needed for Ocean Best Practices



# What is the Ocean Best Practices System?

[www.oceanbestpractices.org](http://www.oceanbestpractices.org)



## Ocean Best Practices System

# Our Vision

A future where there are agreed and broadly adopted methods across ocean research, operations and applications



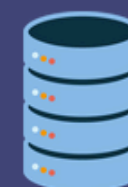
## What is a Best Practice?

A best practice is a methodology that has repeatedly produced superior results relative to other methodologies with the same objective; to be fully elevated to a best practice, a promising method will have been adopted and employed by multiple organizations.



## What is the OBPS?

The OBPS is a global, sustained system comprising technological solutions and community approaches to enhance management of methods as well as support the development of ocean best practices.



## Search for A Best Practice

Click here to search for a Best Practice at oceanbestpractices.org

[Best practices in the Repository](#)



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*sea level* recorders

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Explore knowledge neighbourhood to enhance discovery

Cryosemantics working group

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Leveraging contextual domain knowledge to enhance search





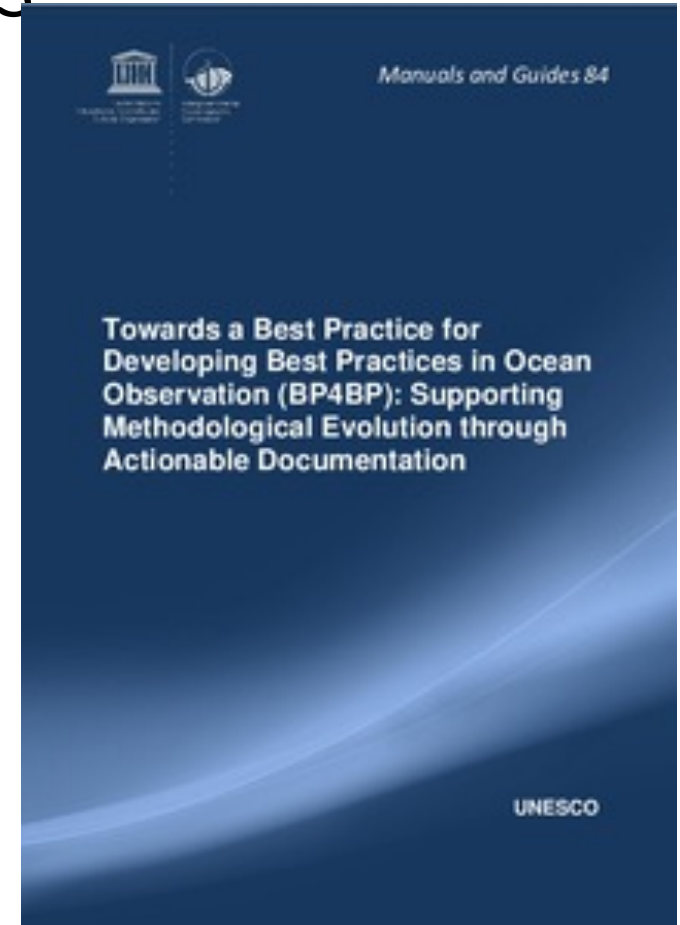
# BP Process Guides and Templates

## User Guides

- [Guidelines for Depositors](#)
- [Guidelines for Editors](#)
- [Best Practices for Best Practices](#)

## Document Templates (further templates ...)

- [Sensors](#)
- [Ocean Applications](#)
- [Data Management](#)



Hörstmann, C.; Buttigieg, P.L.; Simpson, P.; Pearlman, J. and Waite, A.M. (2021) **Perspectives on Documenting Methods to Create Ocean Best Practices**. *Frontiers in Marine Science*, 7:556234, 5pp. DOI: 10.3389/fmars.2020.556234

Hörstmann, C.; Buttigieg, P.L.; Simpson, P.; Pearlman, J. ; Karstensen, J. and Waite, A.M. (2020) **Towards a Best Practice for Developing Best Practices in Ocean Observation (BP4BP): Supporting Methodological Evolution through Actionable Documentation**. Paris, France, UNESCO, 33pp. (Intergovernmental Oceanographic Commission Manuals and Guides No. 84). (IOC/2020/MG/84). DOI: <http://dx.doi.org/10.25607/OBP-781>



## GO-SHIP Repeat Hydrography Manual: A Collection of Expert Reports and Guidelines.

IOCCP Report No. 14  
ICPO Publication Series No. 134

Updated Version 1.1, 2019

**Best Practices for Implementing Acoustic Technologies to Improve Reef Fish Ecosystem Surveys**  
Report from the 2017 GCFI Workshop  
NOAA Technical Memorandum NMFS-F/SPO-192  
April 2019



**ORIGINAL RESEARCH ARTICLE**  
Front. Mar. Sci., 30 July 2020 | <https://doi.org/10.3389/fmars.2020.00485>

## Daily Subsurface Ocean Temperature Climatology Using Multiple Data Sources: New Methodology

Michael P. Hemming<sup>1,2\*</sup>, Moninya Roughan<sup>1,2</sup> and Amandine Schaeffer<sup>1,2</sup>



Structure network for Coastal Observatories - JERICO-NEXT  
Quality control and management practices



## Field Manuals for Marine Sampling to Monitor Australian Waters

The Marine Biodiversity Hub has developed a suite of field manuals to ensure that data collected by marine sampling platforms at different times and places across Australia are directly comparable.  
The Marine Sampling Field Manuals for Monitoring Australia's Marine Waters support the national-scale monitoring and observing of Australia's marine environment while also connecting to global initiatives through the Ocean Best Practices System. With more than 136 contributors from 53 agencies, the manuals include information on marine survey design, pre-survey planning, gear deployment and retrieval, and data management. They provide consistent, defensible methods for collecting data that can be compared with other regional and national collections and are endorsed by researchers, managers, and technicians from multiple agencies with a variety of experience and subject-matter expertise.

- For more information about the field manuals and their benefits, see this story: [Marine sampling field manuals support biodiversity monitoring at a national scale.](#)
1. Introduction
  2. Survey Design
  3. Multibeam Echosounder
  4. Autonomous Underwater Vehicles
  5. Benthic Baited Remote Underwater Video
  6. Pelagic Baited Remote Underwater Video
  7. Towed Imagery
  8. Sleds & Trawls
  9. Grabs and Box corers
  10. Remotely Operated Vehicles



SCOR WG 142:  
Quality Control Procedures for Oxygen and Other Biogeochemical Sensors on Floats and Gliders

## Recommendation for Oxygen Measurements from Argo Floats: Implementation of In-Air-Measurement Routine to Assure Highest Long-term Accuracy

**Situation**  
As Argo has entered its second decade and chemical/biological sensor technology is improving constantly, the marine biogeochemistry community is starting to embrace the successful Argo float program. An augmentation of the global float observatory, however, has to follow rather stringent constraints regarding sensor characteristics as well as data processing and quality control routines. Owing to the fairly advanced state of oxygen sensor technology and the high scientific value of oceanic oxygen measurements (Gruber *et al.*, 2010), an expansion of the Argo core mission to routine oxygen measurements is perhaps the most mature and promising candidate (Freeland *et al.*, 2010).  
In this context, SCOR Working Group 142 "Quality Control Procedures for Oxygen and Other Biogeochemical Sensors on Floats and Gliders" ([www.scor-int.org/SCOR\\_WGs\\_WG142.htm](http://www.scor-int.org/SCOR_WGs_WG142.htm)) set out in 2014 to assess the current status of biogeochemical sensor technology with particular emphasis on float-readiness, develop pre- and post-deployment quality control metrics and procedures for oxygen sensors, and to disseminate procedures widely to ensure rapid adoption in

ably the highest maturity relevant characteristics of ss for float applications. *et al.*, 2012), the optodes' of the flow regime (Bittig Asaro and McNeil, 2013; into the possibilities and tools and best practices

kg<sup>-1</sup>; Gruber *et al.*, 2010) rely tightly constrained. It drift (Bittig *et al.*, 2012; 2008), there is increasing in also exhibit a small but lifetime of a float. It has *tu* calibration routine that emented.

used to mount the optode surment as a means of and Bushinsky, 2014)



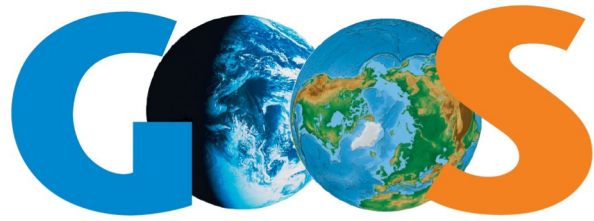
# Convergence & Endorsement



- **Convergence:** process where existing, but fragmented, knowledge is synthesized/converged to create a comprehensive document – that may qualify as “Best Practice”



- **Endorsement:** process where organizations/coordination groups approve documents as the current standard for their operations



The Global Ocean  
Observing System

**Endorsement**



**To qualify as “GOOS endorsed” a best practice is expected to**



1. have completed a rigorous community review process
2. approved by the leadership of the relevant network
3. is fit for the purpose and fully satisfies the definition of a best practice on the OBPS
4. has been recognised through the relevant GOOS body
5. is available and identifiable within the OBPS repository, or will be submitted as soon as endorsement is received.
6. Is updated at relevant timeframes



<https://www.ocean-ops.org/board?t=dbcp>

- Home
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- Web Links
- Data Value and Impact
- Search & Help

## Standards and Best Practice

### Best Practice Documents:

Best Practices are defined as a methodology that has repeatedly produced superior results relative to other methodologies with the same objective; to be fully elevated to a best practice, a promising method will have been adopted and employed by multiple organizations ([Pearlman et al. 2019](#)).

Best Practices have always been an essential component across all areas of the observing system and the Observations Coordination Group (OCG) ocean observing networks are committed to ensuring that their best practices are comprehensive, findable and are used.

The WMO Integrated Global Observing Systems ([WIGOS](#)), the Intergovernmental Oceanographic Commission of UNESCO (IOC), and the OCG, are seeking increased collaboration with partner organisations towards the objective of harmonized standards, and better traceability of observations to standards. In an ongoing effort to ensure this, DBCP is working at providing best practices for the life cycle of all Essential Ocean Variables (EOVs) observed under the program, for each stage of the observation life cycle.

The [GOOS Catalogue of Practices and Standards](#) is available via <http://bestpractice.iode.org/>. The [WMO No.8](#) specifies instrumentations and observations at [https://community.wmo.int/activity-areas/imop/wmo-no\\_8](https://community.wmo.int/activity-areas/imop/wmo-no_8). There are also documented standards and guidelines on the [Ocean Standards website](#).

The DBCP is contributing to this effort by compiling this list of best practice documents available and will identify gaps in the documentation and where documents need to be updated. These best practices which have undergone community review and the network considers to be fully supported by the DBCP community will be identified as DBCP 'GOOS endorsed' and tagged as such in the IODE/GOOS <http://oceanbestpractices.org> repository. The [DBCP Technical Document](#) series makes up an important part of the standards and best practice documentation.

	Drifting Buoys	Moored Buoys
Deployment techniques	<ul style="list-style-type: none"> <li>• <a href="#">DBCP Deployment Information</a></li> <li>• <a href="#">Deployment instructions (multiple languages)</a></li> <li>• <a href="#">AOML GDP Deployment Docs</a></li> <li>• <a href="#">Deployment considerations (DBCP Training Course)</a></li> <li>• <a href="#">Metservice New Zealand Drifter Checklist (doc)</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Buoy Safety Considerations</a></li> </ul>

Search DBCP web



# Community engagement throughout the process

- Submit BP & use BP on repository, be an advocate
- Come to the workshop in September
- Submit to Frontiers and act as a reviewer
- Engage and feedback to this working group
- Raise areas/opportunities of development, outreach and capacity development, link with IODE Ocean Teacher
- Submit to newsletter





## *Fifth Pacific Islands Training Workshop on Ocean Observations and Data Applications (PI-5)*

Announcing the Fifth OBPS Community Workshop - September 20-24, 2021: An Ocean of Values  
<https://workshop5.oceanbestpractices.org/>

Pre-registration is open!

[Click here!](#)



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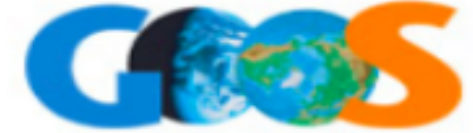
# An Ocean of Values

The 5th [Community Workshop](#) of the [IOC-UNESCO Ocean Best Practices System](#)





# Fifth Pacific Islands Training Workshop on Ocean Observations and Data Applications (PI-5)



Steering Group - OBPS	
Sergey Belov	Adam Leadbetter
Mark Bushnell	Frank Muller-Karger
Pier Luigi Buttigieg	Cristian Muñoz
Claudia Delgado	Francoise Pearlman
Juliet Hermes	Jay Pearlman
Emma Heslop	Peter Pissierssens
Cora Horstmann	Rachel <u>Przeslawski</u>
Kirsten Isensee	Nick Roden
Johannes Karstensen	Pauline Simpson
Arno Lambert	Jordan van Stavel
Ana Lara Lopez	

