



# An update on: Developing Best Practices for Sea-going Operations

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RVTEC Annual Meeting  
October 28, 2021



# Group Members & Working Group Leads



**Katie Watkins-Brandt**  
Regional Class Research Vessel- Datapresence & Engineering Support Center (R-DESC)  
Sensor Systems Engineer



**Kristin Beem**  
UNOLS Tech Training Committee  
RCRV Marine Science Systems Engineer



**Shawn Smith**  
Rolling Deck To Repository  
SAMOS Initiative  
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**Laura Stolp**  
Rolling Deck to Repository  
Woods Hole Oceanographic Institute  
Shipboard Scientific Support Group



**Rebecca Hudak**  
Rolling Deck to Repository  
Woods Hole Oceanographic Institute  
Shipboard Scientific Support Group



**Jules Hummon**  
UHDAS ADCP  
University of Hawaii



**Gabe Matthias**  
University of Rhode Island  
Graduate School of Oceanography



**Jay Pearlman, Ph.D. Fellow IEEE**  
IEEE France  
Director, Four Bridges  
Ocean Best Practices System Steering Group



**Mark Bushnell**  
National Coordinator, US IOOS/QARTOD  
IOC/Ocean Best Practices System Steering Group  
US CLIVAR Uncertainty Quantification Working Group



**Marine Technicians!**



# Best Practices for Shipboard Underway Transmissometers

**OceanBestPractices**  
Repository of Ocean Community Practices in  
Ocean Research, Observation and  
Data/Information Management

Home / → ZZZ\_Miscellaneous Communities / Miscellaneous Community Practices

## Best Practices for Shipboard Underway Transmissometers. Version 1.

This best practice document was developed under the Rolling Deck to Repository project by a small working group comprised of the document authors. These recommendations are specifically for transmissometers installed within a research vessel's (RVs) scientific flow-through sea water (underway) system. They are not focused on transmissometers used for CTD/Rosette casts, though some information may be applicable. All underway transmissometers in the academic research fleet presently are WET Labs (henceforth Sea-Bird) C-Stars. Review of available sensors shows this will continue to be the most available and adaptive device. The Goal of this document is to provide best practices for operators that will improve access to transmissometer data and metadata to support routine data quality evaluation and science application.....



Check out the Rebecca Hudak and Laura Stolp LIVE poster today at 13:00!

Check out the R2R presentation during the UNOLS Session 4: Instrumentation and Data Facilities recording:

[https://www.youtube.com/watch?v=b-DxJ\\_pORGo](https://www.youtube.com/watch?v=b-DxJ_pORGo)

<https://oceanbestpractices.org>

Smith, S.R., D. Forcucci, J. Goes, R. Hudak, A. Mishonov, L. Stolp, and K. Watkins-Brandt, 2020: Best Practices for Shipboard Underway Transmissometers. Version 1. Tallahassee, FL, Florida State University, Center for Ocean-Atmospheric Prediction Studies, 13pp. DOI:10.25607/OBP-790



# RVTEC Virtual Meeting October 2020

## Introduction to the Ocean Best Practices System (OBPS) by Mark Bushnell

- Background and capabilities

## Introduction to our initiative:

- Group members
- Plan for the development of Best Practices documents for sea-going operations and accompanying decision trees
- Participation of beta testing of Best Practice documents



**Standardization of Best Practices**, to an already demanding job, there is an extra ambiguity of how to care for a sensor in a shipboard setting can be confusing and sometimes overwhelming.

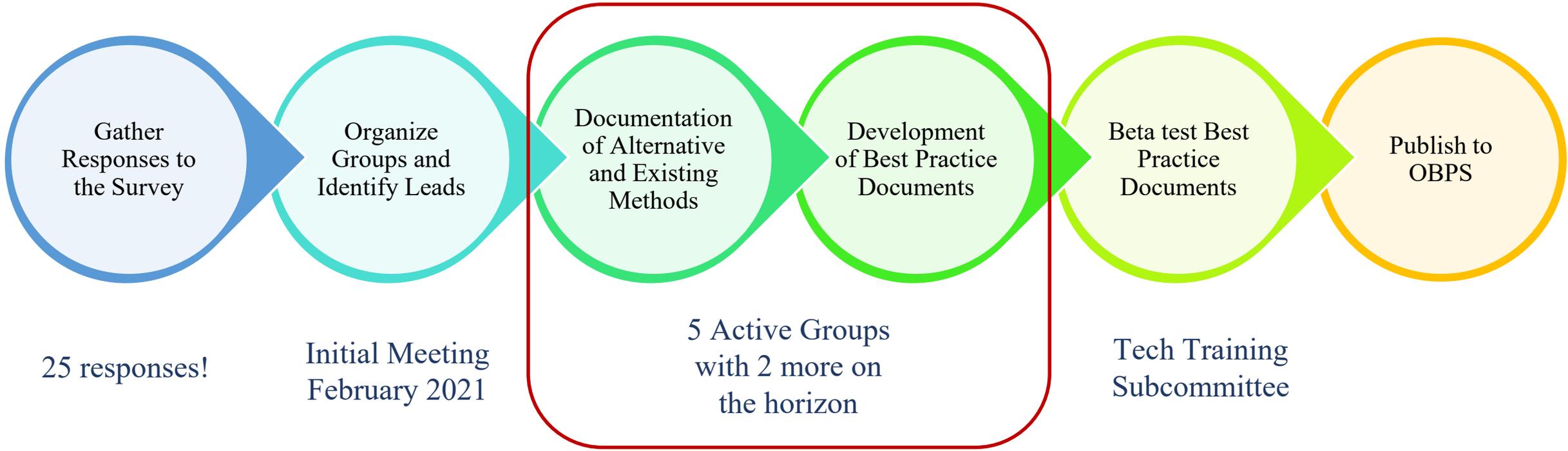
**Leverage of Calibration funding**, to standardize calibrations across the fleet

**Professional Development**, through the publication of Best Practices.

**You're the experts** and wholly responsible for the care of sensors at sea!



# Our Approach





## 27 Potential Best Practice Documents Identified

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Based on significant overlap with those interested, 5 active groups were identified with 2 on the horizon.

### Active Working Groups:

- EK-80 Fisheries Sonar Suite, led by Kristin Beem and Rebecca Hudak
- General Flowthrough System, led by Shawn Smith
- CTD Profiler, led by Laura Stolp and Rebecca Hudak
- SBE-43 Oxygen Sensor, led by Gabe Matthias
- ADCP, led by Jules Hummon

### On the Horizon:

- SBE-45 Thermosalinograph, led by Emily Shimada
- WET-Star Fluorometer, led by Kate Kouba and Katie Watkins-Brandt



# EK-80 Fisheries Sonar Suite



- First meeting March 2021
- Took a brief break during active sailing season
- 17 active members contributing; including those from NOAA, UNH, OSU, URI, and WHOI
- Including a strong focus on calibrating an EK80 as well as what features should be running to get the best data

Interested? Email us!

[rhudak@whoi.edu](mailto:rhudak@whoi.edu)

[kristin.beem@oregonstate.edu](mailto:kristin.beem@oregonstate.edu)

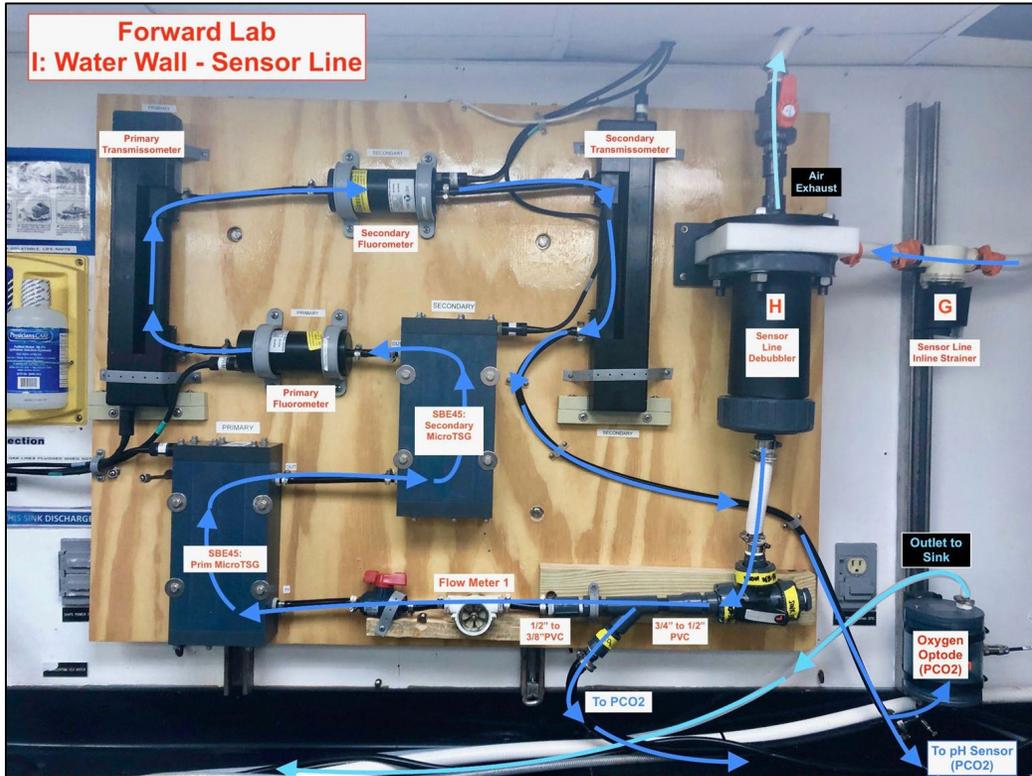




# General Flowthrough System

Interested?

Email: [srsmith@fsu.edu](mailto:srsmith@fsu.edu)



Atlantic Explorer flowthrough system with flow direction marked.  
Photo courtesy of BIOS.

- Kicked off on 29 September 2021
- Primary scope
  - Focus on components of flowthrough system
    - Intakes, sea chest, pipes/tubing, pumps, flow meters, debubblers
  - Will not address specific sensors in system, but may recommend sensor placement, orientation, etc.
- Gathering existing documents, SOP
- 17 people presently on working group mailing list
  - Discussed need for additional engineering and scientific advisors
- Next virtual meeting will be in early November 2021



# CTD Profiler

Interested?  
Email: [lstolp@whoi.edu](mailto:lstolp@whoi.edu) or [rhudak@whoi.edu](mailto:rhudak@whoi.edu)



- Started meeting in September
- Organizing the 100s of documents from OBPS and other Institutes
- Interested participants: 19
- Goals:
  - Work with O<sub>2</sub> flowthrough systems BP due to some overlap
  - Create a well-rounded best practices document
  - One-pager reference for data collection and cleaning
  - Appendix for related documents/technical references

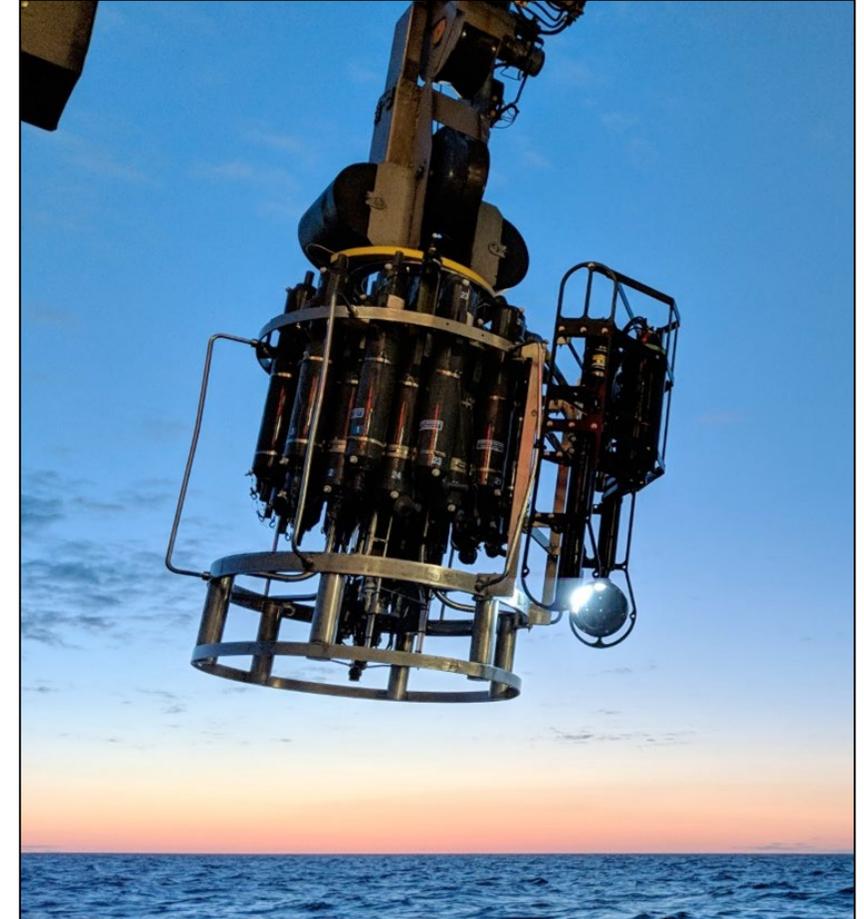


Photo cred: Emily Shimada



# SBE-43 Oxygen Sensor

Interested?  
Email: [gabe\\_matthias@uri.edu](mailto:gabe_matthias@uri.edu)



- Multiple resources compiled, with two groups contributing baseline best practice documents to build from
- Discussion of integration/appendices for flowthrough and CTD groups
- 16 people on the email list, but looking to add more
- Two goals: “comprehensive” and “field” documentation
- Next phone call: November 18 1200-1300 EST. Sharpen your pencils!





# ADCP - Acoustic Doppler Current Profiler



Focus on **vessel-mounted**: acquisition systems UHDAS, VmDAS

- (other applications include lowered (eg. on CTD rosette), autonomous vehicles, moored

15 interested parties in email group

Academic Research Fleet uses UHDAS, so leverage [UHDAS+CODAS documentation](#), including:

- [UHDAS Best Practices](#) (new)
- [VmDAS Recommendations](#) (prior)

Identified existing documents (eg. in <https://repository.oceanbestpractices.org>, <https://www.go-ship.org>)

- vessel-mounted (ADCP installation, data collection)
- Lowered ADCP data collection
- mooring data QA/QC

Future: meet to discuss, refine

email: [uhdas@hawaii.edu](mailto:uhdas@hawaii.edu)



# 2021 Ocean Best Practices Workshop Update

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- OBPS support
- Official recognition
- Endorsement of developed best practice documents
- Task Teams for reaching short term goals (decision trees)
- Methods to promote international involvement (INMARTECH)

OBPS October Newsletter:

<https://us13.campaign-archive.com/?u=ab89e583ff8a6a2e366e1fdcf&id=c368281e52>



## Interested?

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Get involved!

- Reach out to the lead of the working group you are interested in joining
  - EK-80: Kristin Beem: [kristin.beem@oregonstate.edu](mailto:kristin.beem@oregonstate.edu) , Rebecca Hudak [rhudak@whoi.edu](mailto:rhudak@whoi.edu)
  - General Flowthrough System: Shawn Smith: [srsmith@fsu.edu](mailto:srsmith@fsu.edu)
  - CTD Profiler: Laura Stolp [lstolp@whoi.edu](mailto:lstolp@whoi.edu) , Rebecca Hudak [rhudak@whoi.edu](mailto:rhudak@whoi.edu)
  - SBE-43 O<sub>2</sub>: Gabe Matthias [gabe\\_matthias@uri.edu](mailto:gabe_matthias@uri.edu)
  - ADCP: Jules Hummon [uhdas@hawaii.edu](mailto:uhdas@hawaii.edu)
- Know someone great that may be interested, let them know!
- Contact Katie with any questions [katie.watkins-brandt@oregonstate.edu](mailto:katie.watkins-brandt@oregonstate.edu)
- Interact with us on our Whova channel- Instrument Best Practices  
[https://whova.com/portal/webapp/rvtec\\_202110/CommunityBoard/topic/905336](https://whova.com/portal/webapp/rvtec_202110/CommunityBoard/topic/905336)