

Observing Air-Sea Interactions Strategy (OASIS)

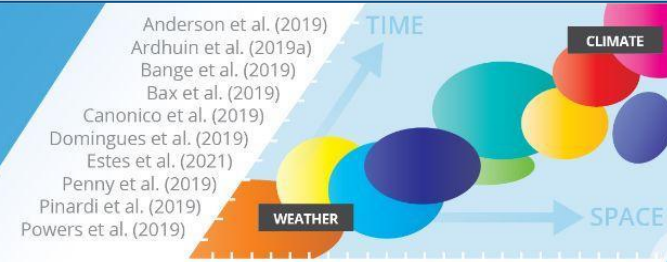
An endorsed programme of the UN Decade of Ocean Sciences for Sustainable Development

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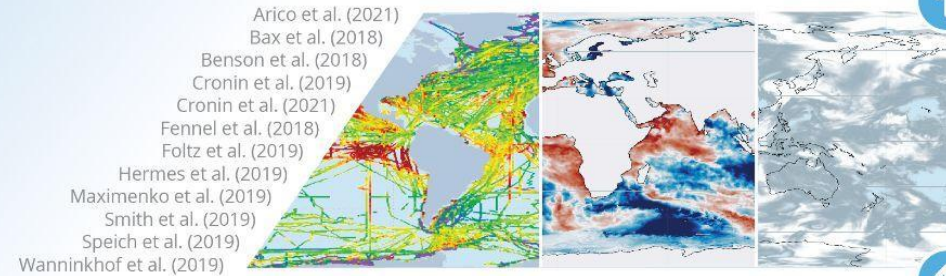
OASIS Co-Chairs: Meghan Cronin (NOAA PMEL, USA), Christa Marandino (GEOMAR, Germany) & Sebastiaan Swart (University of Gothenberg, Sweden)
SCOR Working Group #162 & OASIS community

Observing Air-Sea Interactions Strategy (OASIS) is harmonizing community recommendations from OceanObs'19 and UN Decade Laboratories...

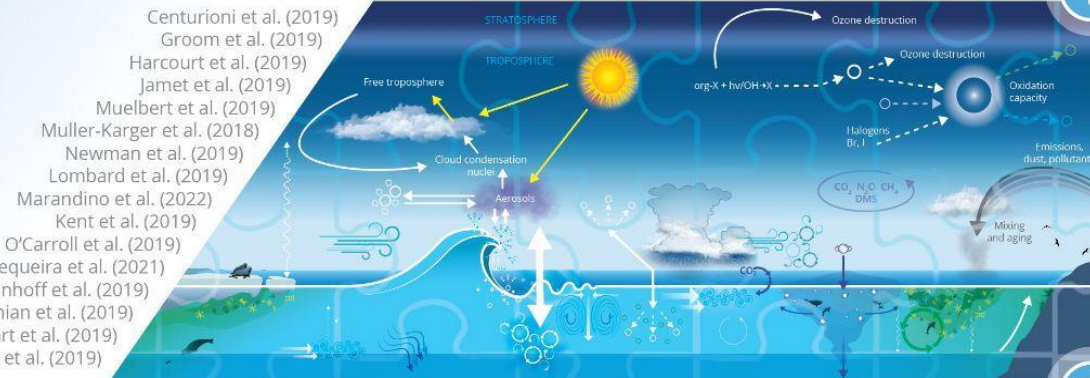
...into three **Grand Ideas**



Improved Earth
system (including
ecosystem) forecasts
for a predicted,
clean, accessible,
healthy, safe &
productive ocean



Improved ocean
information
serving
stakeholders
around the world

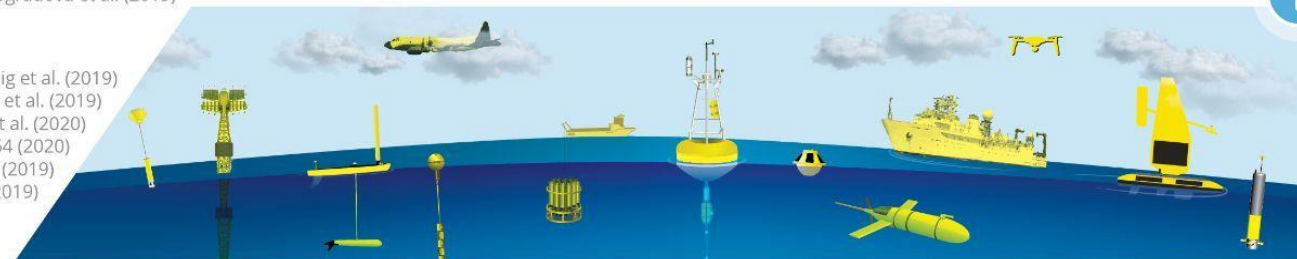


Grand Idea #3
Improved models
& understanding of
air-sea interaction
processes



Grand Idea #2
Satellites optimized
for air-sea fluxes

Meinig et al. (2019)
Pearlman et al. (2019)
Sabine et al. (2020)
SCOR Working Group 154 (2020)
Smith et al. (2019)
Wang et al. (2019)



Grand Idea #1
A globally distributed
in situ air-sea
observing network
built around an
expanded array of
time series stations

Theory of Change



**2021
2030**

United Nations Decade
of Ocean Science
for Sustainable Development



Credit: Polar Glider, Gothenburg University. (c) Louise Biddle



2018 SOLAS summer school

© Jessica Gier

PARTNERS

MARINER
STUDENT
BEST PRACTICE
EXPERT
DATA
SPECIALIST
ENGINEER
PRODUCT
DEVELOPER
ANALYST
PRINCIPAL
INVESTIGATOR
INSTITUTION

*Air-sea interaction information
could be significantly expanded ...
by developing a culture of
mentorship and partnership*

SCALE

GLOBAL
REGIONAL
LOCAL

DERIVED VARIABLES

HIGH RESOLUTION
SURFACE ESSENTIAL
OCEAN VARIABLES (EOV)
Considered both derived and measured

ESSENTIAL CLIMATE
VARIABLES (ECV)

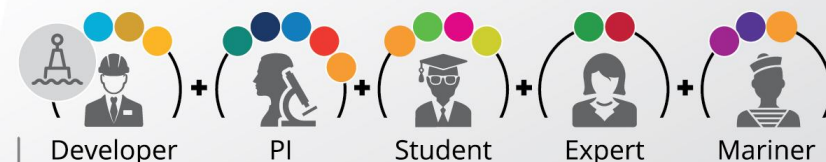
ESSENTIAL BIODIVERSITY
VARIABLES (EBV)

MEASURED VARIABLES

*Making platforms multidisciplinary
and multifunctional, the OASIS
network can provide high-quality
air-sea fluxes that serve multiple
stakeholders.*

**OBSERVATION
PLATFORM**

EXAMPLE





OASIS Co-Chairs
& Staff

SCOR Working
Group #162

OASIS
Community

To join Theme Teams, select
"Get Involved" button on airseaobs.org
<https://airseaobs.org/get-involved>

OASIS
Theme Team
(TT)

**Observing
Network Design
& Model
Improvements**

Defining
Question

How should air-sea
flux estimates be
improved and
understood to build
a global OASIS
network for a
predictable, clean,
healthy, resilient &
productive ocean?

Near-term
tasks SCOR
WG #162
deliverables

Harmonize
recommendations
for network design,
process studies &
OASIS roadmap

**Capacity &
Partnership
Strengthening**

How can we deliver
sustainable support
and long-term
learning and
sharing
opportunities
related to air-sea
interactions?

Develop curriculum,
summer schools,
mentoring &
partnerships

**UN Decade
OASIS Actions**

How can we
implement
transformational
Actions through
leveraged UN
Ocean Decade
opportunities?

Propose/implement
globally distributed
observing network,
supersites &
optimized satellites

**Best Practices &
Interoperability**

How can we
converge on best
practices to create
interoperable
observing platforms
for essential ocean
variables?

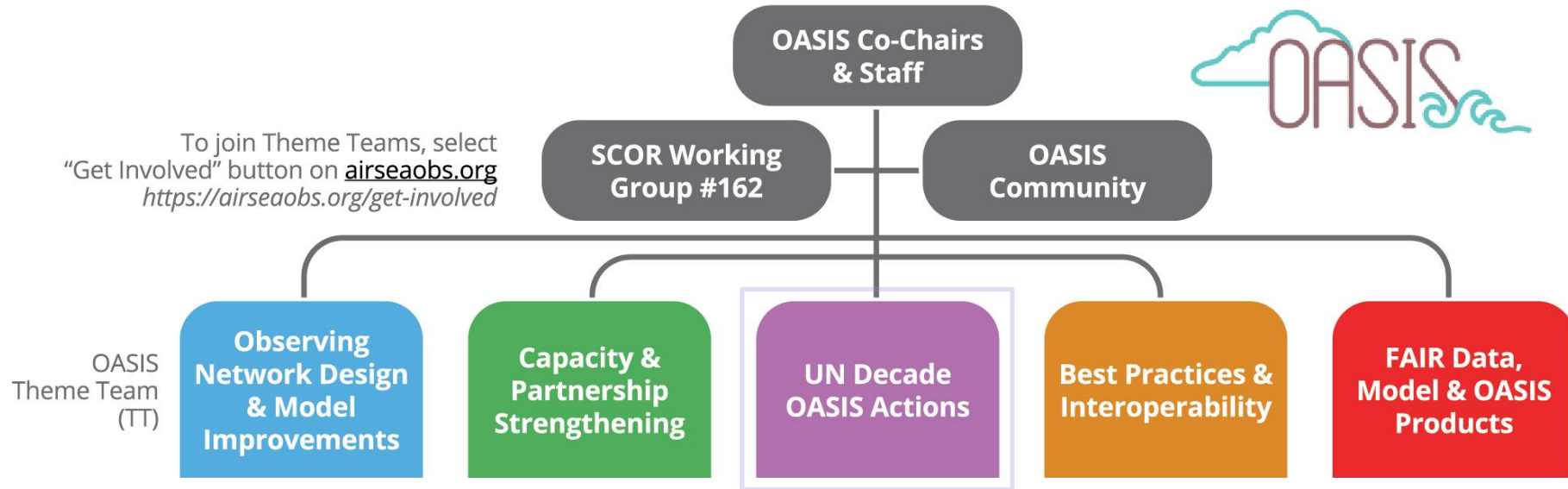
Create endorsed
community best
practices

**FAIR Data,
Model & OASIS
Products**

What Findable-
Accessible-Interoper-
able-Reusable (FAIR)
data, models and
products will serve
ocean information
for Tomorrow's
needs?

Air-sea flux toolbox,
gridded flux products,
direct covariance flux
library & open data

OASIS Theme Team: Network Design & Model Improvement



*"The endorsed UN Ocean Decade Project's goal is to build an **Observing Air-Sea Interaction Strategy (OASIS)** & Community of Practice for this emerging **Uncrewed Surface Vehicle (USV) network**"*

*-- Sarah Nicholson (South Africa)
ECOP PI representing
Emerging USV Network at OCG-14*





The Global Ocean Observing System



<https://airseaobs.org/>
SCOR #162

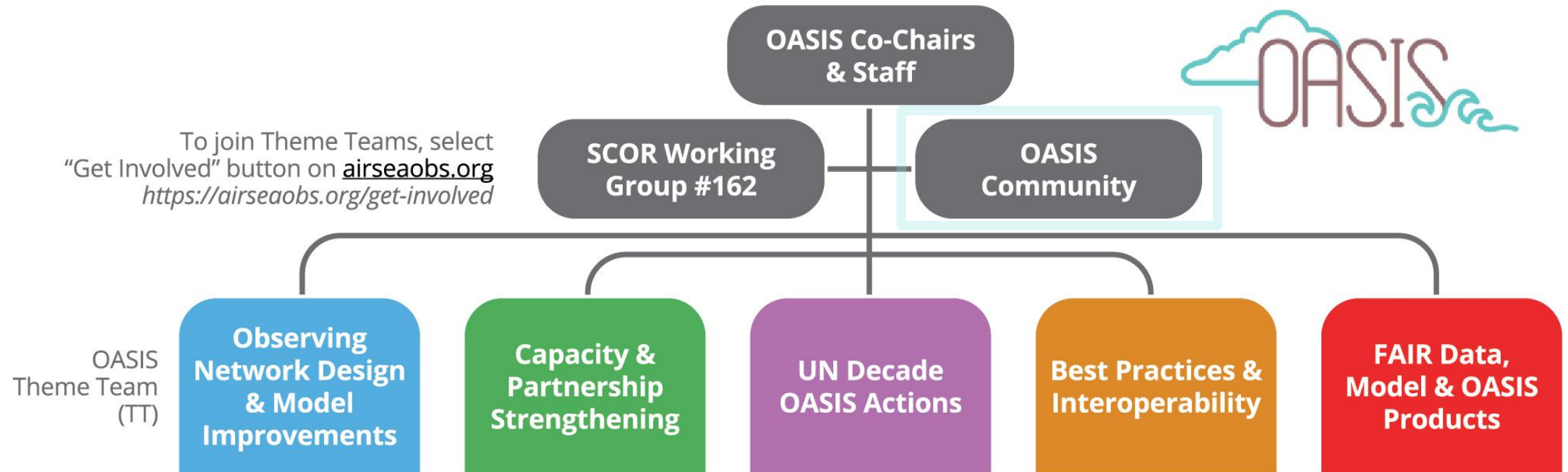
OCG-14 Hybrid Meeting
6-8 June 2023
Cape Town, South Africa

Uncrewed Surface Vehicle (USV) Observing Air-Sea Interactions Strategy (OASIS)

Sarah Nicholson* (South Africa)
Ruth Patterson* Meghan Cronin, Samantha Wills*, Johan Edholm*, Adrienne Sutton, Dongxiao Zhang, Laurent Grare, Tom Farrar, Greg Foltz, Jim Thomson, Eugene Burger, Jack Reeves Eyre*, Luc Lenain, Jaime Palter, Chidong Zhang, Andy Chiodi, Eric Lindstrom, Chris Meinig, Seb Swart, Marcel du Plessis*, Iwao Ueki, Akira Nagano, Pedro Monteiro, Carlos Barrera, Christoph Waldmann

*Early Career Ocean Professional (ECOP)





Join OASIS Theme Teams and
"Get Involved" at:
<https://airseaobs.org/get-involved>



OASIS - SOLAS Scholars from the Surface Ocean-Lower
Atmosphere Studies (SOLAS) Open Science Conference
in Cape Town South Africa, Sep 25-29, 2022